# An evaluation on four potential *SLA*s for West Greenland bowhead whales using the agreed evaluation and robustness trials

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## INTRODUCTION

This paper provides results from the application of the software developed by Andre Punt for the West bowhead whale trials as agreed at the AWMP Intersessional Workshop (IWC, 2014) to four potential *SLA*s.

To facilitate comparison across different *SLA*s in an initial analysis only, a summary statistic developed by Brandão and Butterworth (2013) to reflect the improvement in the performance achieved by a candidate *SLA* compared to the extreme of a *Strike Limit = Need* approach was used to select the best performing *SLA* from a range of *SLA*s that were considered by Brandão and Butterworth (2013), two of which formed part of the 'reference *SLA*s' as given in IWC (2012). Variants of the selected *SLA* were than considered to address shortcomings in the performance of that *SLA*.

## *SLA*s CONSIDERED

Four *SLA*s are considered in this paper. One of these form part of the 'reference *SLA*s' as given in IWC (2012) and is included here for a comprehensive description of the *SLA*s considered, while three others are variants of another one of these 'reference *SLA*s'. A fifth *SLA* which sets the *Strike Limit* equal to need is also considered, but its primary use is to provide a baseline to which to compare the performances of the other *SLA*s and is referred to as *SLA*0.

*SLA*1: Interim *SLA* which sets the *Strike Limit* as the lesser of need and $0.02\hat{N}e^{-1.645CV}$
where $\hat{N}$ is the most recent estimate of abundance and *CV* is the coefficient of variation of $\hat{N}$.

*SLA*2: Weighted-average interim *SLA* which uses all the abundance estimates and replaces $\hat{N}$ and *CV* in *SLA*1 by:

$$\hat{N} = \exp\left[\sum_i \frac{0.95^{t_i} \ln N_i}{CV_i^2} \Big/ \sum_i \frac{0.95^{t_i}}{CV_i^2}\right] \tag{1}$$

$$CV = \sqrt{\sum_i \frac{0.95^{2t_i}}{CV_i^2} \Big/ \sum_i \frac{0.95^{t_i}}{CV_i^2}}$$

(2)

where $N_i$ is the $i$th estimate of abundance, $CV_i$ is the coefficient of variation of $N_i$, and $t_i$ is the time (in years) between when the $i$th estimate of abundance was obtained and the first year of the block for which a *Strike Limit* is needed. The downweighting factor which reduces the weight of earlier compared to more recent abundance estimates is 0.95.

*SLA*3: Variant of *SLA*2 described above. This variant adjusts the 0.02 weight applied to $\hat{N}$ as in *SLA*1 by a function of the observed trend of the abundance indices, so that the *Strike Limit* is set as the lesser of need and $0.02 f\left(\beta^*\right)\hat{N}e^{-1.645CV}$, where

$$f\left(\beta^*\right) = \alpha + (1-\alpha)\frac{1}{1+e^{(\beta^*-\bar{\beta})/\delta}},$$

where

$\beta^* = \hat{\beta} - \lambda s_{\hat{\beta}}$, where $\hat{\beta}$ is the negative of the slope of the log-linear regression applied to the abundance indices, $s_{\hat{\beta}}$ is the standard error of the slope coefficient and $\lambda$ is a control parameter.

$\alpha, \bar{\beta}$, and $\delta$ are control parameters.

For this variant the following values are applied to the control parameters:

$\alpha = 0.2, \bar{\beta} = 0.005, \delta = \bar{\beta}\big/3$, and $\lambda = 2$, which provide the largest change in depletion compared to *SAL*2. The function $f\left(\beta^*\right)$ is only calculated if there are more than three abundance indices, otherwise it is set to 1.

*SLA*4: Variant of *SLA*3 described above. In this variant the control parameters are set to:

$\alpha = 0.3, \bar{\beta} = 0.02, \delta = \bar{\beta}\big/5$, and $\lambda = 1$, which provide the least change in depletion compared to *SAL*2.

**RESULTS AND DISCUSSION**

Table 1 gives the lower 5%-ile D1, D10 and N9 statistics for the bowhead trials for each of the four *SLA*s considered. Trials that show very poor performance in terms of relative increase in population size are highlighted. Note that Appendix A gives details of all the trials and need envelopes considered. Appendix B gives all the results for the more important statistics as indicated in IWC 2014, for the four *SLA*s.

Unsurprisingly, Table 1 reflects that the trials showing poor results in terms of the lower 5%-ile D1 statistic are almost all associated with the lowest value of MSYR$_{1+}$ considered of 1% for bowheads. The *SLA* selected initially from a range of *SLA*s investigated by Brandão and Butterworth (2013) is *SLA*2. Although this SLA performs well in terms of need satisfaction, in terms of depletion values (D1) and relative increase in population size (D10), it performs poorly for some trials for lower MSYR$_{1+}$ value. The variants of this SLA considered were developed to try and improve on the relative increase in population size. This comes of course at the expense of meeting need satisfaction (Table 1).

## ACKNOWLEDGMENT

## REFERENCES

Brandao, A. and Butterworth, D.S. 2013. An evaluation on four SLAs for West Greenland humpback and bowhead whales using the agreed evaluation and robustness trials. SC/65a/AWMP02.

International Whaling Commission. 2012. Report of the Fourth AWMP Workshop on the Development of *SLA*s for the Greenlandic Hunts.

International Whaling Commission. 2014. Report of the AWMP Intersessional Workshop on Developing *SLA*s for the Greenlandic Hunts.

**Table 1.** Lower 5%-ile values for final depletion (D1), average need satisfaction (N9) and relative increase of 1+ population size (D10) for West Greenland bowhead whales. Results are shown for the four *SLA*s considered. For comparison, results setting catch equal need (*SL*0) are also given.

a) Evaluation Trials

| | D1: Final depletion 1+ pop (5%) | | | | | N9: 5% Need satfn(100) | | | | | D10: Relative increase 1+ pop (5%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SLA0 | SLA1 | SLA2 | SLA3 | SLA4 | SLA0 | SLA1 | SLA2 | SLA3 | SLA4 | SLA0 | SLA1 | SLA2 | SLA3 | SLA4 |
| GB01AA | 0.610 | 0.610 | 0.610 | 0.623 | 0.610 | 1.000 | 0.951 | 1.000 | 0.903 | 0.971 | 1.860 | 1.860 | 1.860 | 1.860 | 1.860 |
| GB01AB | 0.586 | 0.586 | 0.586 | 0.612 | 0.586 | 1.000 | 0.949 | 1.000 | 0.847 | 0.968 | 1.830 | 1.830 | 1.830 | 1.830 | 1.830 |
| GB01BA | 0.001 | 0.008 | 0.001 | 0.025 | 0.012 | 1.000 | 0.654 | 0.999 | 0.417 | 0.625 | 0.050 | 0.350 | 0.050 | 0.810 | 0.490 |
| GB01BB | 0.000 | 0.005 | 0.001 | 0.024 | 0.012 | 1.000 | 0.553 | 0.833 | 0.365 | 0.504 | 0.000 | 0.210 | 0.050 | 0.800 | 0.320 |
| GB01CA | 0.895 | 0.934 | 0.895 | 0.973 | 0.937 | 1.000 | 0.793 | 0.991 | 0.434 | 0.733 | 0.920 | 0.950 | 0.920 | 0.980 | 0.950 |
| GB01CB | 0.496 | 0.886 | 0.780 | 0.966 | 0.900 | 1.000 | 0.686 | 0.845 | 0.376 | 0.615 | 0.510 | 0.910 | 0.790 | 0.970 | 0.910 |
| GB02AA | 0.610 | 0.613 | 0.610 | 0.628 | 0.612 | 1.000 | 0.967 | 1.000 | 0.843 | 0.938 | 1.860 | 1.860 | 1.860 | 1.860 | 1.860 |
| GB02AB | 0.586 | 0.591 | 0.586 | 0.615 | 0.589 | 1.000 | 0.961 | 1.000 | 0.821 | 0.931 | 1.830 | 1.830 | 1.830 | 1.830 | 1.830 |
| GB02BA | 0.001 | 0.011 | 0.001 | 0.028 | 0.013 | 1.000 | 0.651 | 0.991 | 0.387 | 0.662 | 0.050 | 0.290 | 0.050 | 0.920 | 0.340 |
| GB02BB | 0.000 | 0.006 | 0.000 | 0.028 | 0.008 | 1.000 | 0.555 | 0.849 | 0.314 | 0.541 | 0.000 | 0.240 | 0.020 | 0.870 | 0.270 |
| GB03AA | 0.611 | 0.614 | 0.611 | 0.634 | 0.617 | 1.000 | 0.987 | 1.000 | 0.854 | 1.000 | 1.860 | 1.860 | 1.860 | 1.860 | 1.860 |
| GB03AB | 0.586 | 0.590 | 0.586 | 0.621 | 0.599 | 1.000 | 0.985 | 1.000 | 0.835 | 1.000 | 1.830 | 1.830 | 1.830 | 1.840 | 1.830 |
| GB03BA | 0.001 | 0.010 | 0.001 | 0.026 | 0.016 | 1.000 | 0.696 | 0.955 | 0.402 | 0.627 | 0.050 | 0.350 | 0.050 | 0.820 | 0.41 |
| GB03BB | 0.000 | 0.006 | 0.001 | 0.026 | 0.013 | 1.000 | 0.557 | 0.796 | 0.356 | 0.512 | 0.000 | 0.190 | 0.020 | 0.810 | 0.380 |
| GB04AA | 0.856 | 0.856 | 0.856 | 0.856 | 0.856 | 1.000 | 0.998 | 1.000 | 0.969 | 1.000 | 1.640 | 1.640 | 1.640 | 1.640 | 1.640 |
| GB04AB | 0.850 | 0.850 | 0.850 | 0.850 | 0.850 | 1.000 | 0.995 | 1.000 | 0.966 | 1.000 | 1.620 | 1.620 | 1.620 | 1.620 | 1.620 |
| GB04BA | 0.110 | 0.110 | 0.110 | 0.122 | 0.110 | 1.000 | 0.896 | 1.000 | 0.810 | 0.957 | 1.090 | 1.110 | 1.090 | 1.260 | 1.110 |
| GB04BB | 0.097 | 0.097 | 0.097 | 0.113 | 0.097 | 1.000 | 0.884 | 1.000 | 0.705 | 0.937 | 0.910 | 0.980 | 0.910 | 1.130 | 0.940 |
| GB05AA | 0.761 | 0.765 | 0.761 | 0.773 | 0.761 | 1.000 | 0.950 | 1.000 | 0.866 | 0.972 | 2.020 | 2.020 | 2.020 | 2.020 | 2.020 |
| GB05AB | 0.732 | 0.743 | 0.732 | 0.760 | 0.743 | 1.000 | 0.948 | 1.000 | 0.828 | 0.968 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 |
| GB05BA | 0.077 | 0.108 | 0.077 | 0.127 | 0.107 | 1.000 | 0.874 | 1.000 | 0.613 | 0.875 | 1.760 | 1.860 | 1.760 | 2.370 | 1.880 |
| GB05BB | 0.039 | 0.088 | 0.041 | 0.124 | 0.090 | 1.000 | 0.779 | 0.984 | 0.512 | 0.781 | 0.860 | 1.470 | 0.930 | 2.360 | 1.540 |
| GB06AA | 0.606 | 0.606 | 0.606 | 0.615 | 0.612 | 1.000 | 0.952 | 1.000 | 0.906 | 0.975 | 1.780 | 1.780 | 1.780 | 1.780 | 1.780 |
| GB06AB | 0.594 | 0.594 | 0.594 | 0.599 | 0.594 | 1.000 | 0.950 | 1.000 | 0.863 | 0.971 | 1.750 | 1.750 | 1.750 | 1.760 | 1.750 |
| GB06BA | 0.062 | 0.086 | 0.062 | 0.105 | 0.086 | 1.000 | 0.881 | 1.000 | 0.700 | 0.887 | 1.600 | 1.610 | 1.600 | 1.870 | 1.600 |
| GB06BB | 0.038 | 0.070 | 0.038 | 0.100 | 0.068 | 1.000 | 0.857 | 0.998 | 0.593 | 0.868 | 1.050 | 1.240 | 1.050 | 1.780 | 1.210 |
| GB07AA | 0.635 | 0.635 | 0.635 | 0.641 | 0.635 | 1.000 | 0.951 | 1.000 | 0.913 | 0.981 | 1.850 | 1.850 | 1.850 | 1.850 | 1.850 |
| GB07AB | 0.615 | 0.615 | 0.615 | 0.626 | 0.615 | 1.000 | 0.949 | 1.000 | 0.864 | 0.976 | 1.810 | 1.810 | 1.810 | 1.820 | 1.810 |
| GB07BA | 0.002 | 0.012 | 0.003 | 0.027 | 0.015 | 1.000 | 0.743 | 0.981 | 0.462 | 0.781 | 0.100 | 0.420 | 0.100 | 0.900 | 0.580 |
| GB07BB | 0.000 | 0.006 | 0.002 | 0.025 | 0.013 | 1.000 | 0.615 | 0.853 | 0.396 | 0.633 | 0.010 | 0.260 | 0.070 | 0.890 | 0.320 |
| GB09AA | 0.693 | 0.693 | 0.693 | 0.693 | 0.693 | 1.000 | 0.952 | 1.000 | 0.923 | 0.981 | 1.890 | 1.890 | 1.890 | 1.890 | 1.890 |
| GB09AB | 0.662 | 0.674 | 0.662 | 0.680 | 0.674 | 1.000 | 0.950 | 1.000 | 0.896 | 0.976 | 1.860 | 1.860 | 1.860 | 1.860 | 1.860 |
| GB09BA | 0.043 | 0.043 | 0.043 | 0.059 | 0.049 | 1.000 | 0.848 | 1.000 | 0.578 | 0.878 | 1.220 | 1.530 | 1.220 | 1.870 | 1.560 |
| GB09BB | 0.025 | 0.037 | 0.025 | 0.058 | 0.041 | 1.000 | 0.769 | 0.959 | 0.480 | 0.812 | 0.550 | 1.200 | 0.730 | 1.810 | 1.290 |
| GB10AA | 0.395 | 0.398 | 0.395 | 0.414 | 0.404 | 1.000 | 0.949 | 1.000 | 0.862 | 0.969 | 2.740 | 2.740 | 2.740 | 2.780 | 2.750 |
| GB10AB | 0.370 | 0.374 | 0.370 | 0.399 | 0.373 | 1.000 | 0.948 | 1.000 | 0.808 | 0.960 | 2.470 | 2.470 | 2.470 | 2.670 | 2.470 |
| GB10BA | 0.151 | 0.169 | 0.151 | 0.187 | 0.156 | 1.000 | 0.929 | 1.000 | 0.768 | 0.904 | 2.590 | 2.660 | 2.590 | 3.030 | 2.670 |
| GB10BB | 0.129 | 0.142 | 0.129 | 0.182 | 0.132 | 1.000 | 0.925 | 1.000 | 0.690 | 0.890 | 2.200 | 2.350 | 2.200 | 2.860 | 2.520 |

**Table 1cont.** Lower 5%-ile values for final depletion (D1), average need satisfaction (N9) and relative increase of 1+ population size (D10) for West Greenland bowhead whales. Results are shown for the four *SLA*s considered. For comparison, results setting catch equal need (*SL*0) is also given.

b) Robustness Trials

| | D1: Final depletion 1+ pop (5%) | | | | | N9: 5% Need satfn(100) | | | | | D10: Relative increase 1+ pop (5%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SLA0 | SLA1 | SLA2 | SLA3 | SLA4 | SLA0 | SLA1 | SLA2 | SLA3 | SLA4 | SLA0 | SLA1 | SLA2 | SLA3 | SLA4 |
| **GB21AA** | 0.438 | 0.438 | 0.438 | 0.441 | 0.438 | 1.000 | 0.951 | 1.000 | 0.883 | 0.971 | 1.010 | 1.010 | 1.010 | 1.010 | 1.010 |
| **GB21BA** | 0.001 | 0.008 | 0.001 | 0.025 | 0.012 | 1.000 | 0.654 | 0.999 | 0.417 | 0.625 | 0.050 | 0.350 | 0.050 | 0.720 | 0.490 |
| **GB22AA** | 0.262 | 0.265 | 0.262 | 0.293 | 0.279 | 1.000 | 0.951 | 1.000 | 0.871 | 0.969 | 1.600 | 1.600 | 1.600 | 1.610 | 1.600 |
| **GB22BA** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | 0.484 | 0.873 | 0.362 | 0.445 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| **GB23AA** | 0.610 | 0.610 | 0.610 | 0.623 | 0.617 | 1.000 | 0.974 | 1.000 | 0.864 | 0.974 | 1.860 | 1.860 | 1.860 | 1.860 | 1.860 |
| **GB23BA** | 0.001 | 0.013 | 0.002 | 0.029 | 0.017 | 1.000 | 0.658 | 0.939 | 0.387 | 0.565 | 0.050 | 0.300 | 0.090 | 0.960 | 0.600 |
| **GB24AA** | 0.504 | 0.504 | 0.504 | 0.519 | 0.504 | 1.000 | 0.954 | 1.000 | 0.902 | 0.969 | 2.490 | 2.490 | 2.490 | 2.490 | 2.490 |
| **GB24BA** | 0.921 | 0.921 | 0.921 | 0.922 | 0.921 | 1.000 | 0.979 | 1.000 | 0.943 | 1.000 | 2.830 | 2.830 | 2.830 | 2.830 | 2.830 |
| **GB25AA** | 0.469 | 0.469 | 0.469 | 0.469 | 0.469 | 1.000 | 0.937 | 1.000 | 0.893 | 0.970 | 2.720 | 2.720 | 2.720 | 2.720 | 2.720 |
| **GB25BA** | 0.051 | 0.068 | 0.052 | 0.101 | 0.068 | 1.000 | 0.842 | 1.000 | 0.531 | 0.854 | 0.490 | 0.980 | 0.500 | 1.950 | 1.020 |

## APPENDIX A

**List of evaluation and robustness trials (see IWC, 2014, Table 5 and 6 of Annex D)**

a) Evaluation trials for bowhead whales

| Trial | Description | Conditioning |
|-------|-------------|--------------|
| GB01AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1 | Yes [1A] |
| GB01AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 10; historic survey bias = 1 | 1A |
| GB01BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1 | Yes [1B] |
| GB01BB | $MSYR_{1+}$ = 1%; need scenario B; survey frequency = 10; historic survey bias = 1 | 1B |
| GB01CA | $MSYR_{1+}$ = 4% (and MSYL1+=0.8); need scenario A; survey frequency = 10; historic survey bias = 1 | Yes [1C] |
| GB01CB | $MSYR_{1+}$ = 4% (and MSYL1+=0.8); need scenario B; survey frequency = 10; historic survey bias = 1 | 1C |
| GB02AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 5; historic survey bias = 1 | 1A |
| GB02AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 5; historic survey bias = 1 | 1A |
| GB02BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 5; historic survey bias = 1 | 1B |
| GB02BB | $MSYR_{1+}$ = 1%; need scenario B; survey frequency = 5; historic survey bias = 1 | 1B |
| GB03AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 15; historic survey bias = 1 | 1A |
| GB03AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 15; historic survey bias = 1 | 1A |
| GB03BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 15; historic survey bias = 1 | 1B |
| GB03BB | $MSYR_{1+}$ = 1%; need scenario B; survey frequency = 15; historic survey bias = 1 | 1B |
| GB04AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 0.5 | Yes [4A] |
| GB04AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 10; historic survey bias = 0.5 | 4A |
| GB04BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 0.5 | Yes [4B] |
| GB04BB | $MSYR_{1+}$ = 1%; need scenario B; survey frequency = 10; historic survey bias = 0.5 | 4B |
| GB05AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1; 3 episodic events | 1A |
| GB05AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 10; historic survey bias = 1; 3 episodic events | 1A |
| GB05BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; 3 episodic events | 1B |
| GB05BB | $MSYR_{1+}$ = 1%; need scenario B; survey frequency = 10; historic survey bias = 1; 3 episodic events | 1B |
| GB06AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1; stochastic events every 5 years | 1A |
| GB06AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 10; historic survey bias = 1; stochastic events every 5 years | 1A |
| GB06BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; stochastic events every 5 years | 1B |
| GB06BB | $MSYR_{1+}$ = 1%; need scenario B; survey frequency = 10; historic survey bias = 1; stochastic events every 5 years | 1B |
| GB07AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches B | 1A |
| GB07AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches B | 1A |

| GB07BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches B | 1B |
|---|---|---|
| GB07BB | $MSYR_{1+}$ = 1%; need scenario B; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches B | 1B |
| GB09AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches D | 1A |
| GB09AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches D | 1A |
| GB09BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches D | 1B |
| GB09BB | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; alternative future Canadian catches D | 1B |
| GB10AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.3) | Yes [1A,10A] |
| GB10AB | $MSYR_{1+}$ = 2.5%; need scenario B; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.3) | 10A |
| GB10BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.3) | Yes [1B,10B] |
| GB10BB | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.3) | 10B |

b) Robustness trials for bowhead whales

| Trial | Description | Conditioning |
|---|---|---|
| GB21AA | Linear decrease in $K$; $MSYR_{1+}$ = 2.5%; need scenario A | 1A |
| GB21BA | Linear decrease in $K$; $MSYR_{1+}$ = 1%; need scenario A | 1B |
| GB22AA | Linear increase in $M$; $MSYR_{1+}$ = 2.5%; need scenario A | 1A |
| GB22BA | Linear increase in $M$; $MSYR_{1+}$ = 1%; need scenario A | 1B |
| GB23AA | Strategic surveys; $MSYR_{1+}$ = 2.5%; need scenario A | 1A |
| GB23BA | Strategic surveys; $MSYR_{1+}$ = 1%; need scenario A | 1B |
| GB24AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.15) | Yes [1A,10A*] |
| GB24BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.15) | Yes [1B,10B*] |
| GB25AA | $MSYR_{1+}$ = 2.5%; need scenario A; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.6) | Yes [1A,10A*] |
| GB25BA | $MSYR_{1+}$ = 1%; need scenario A; survey frequency = 10; historic survey bias = 1; asymmetric environmental stochasticity (depletion = 0.6) | Yes [1B,10B*] |

**Description of the different need scenarios and alternative future Canadian catches (see IWC, 2014, Table 4 of Annex D) for bowhead whales**

| Need scenario | Description |
|---|---|
| **A** | Need envelop: [2,3,5 -> 5 over 100 years] |
| **B** | Need envelop: [2,3,5; 5 -> 10 over years 17-100] |
| Alternative future Canadian catches [**Bowheads only**] | |
| **A** | [5 -> 5 over 100 years] |
| **B** | [2-> 8 over 100 years] |
| **C** | [2 -> 2 over 100 years] |

# APPENDIX B

## Further *SLA* results

Table B.1. The more important statistics for *SLA*1 (interim SLA). Robustness trials are highlighted.

| | D1: Final depletion 1+ pop | | | D1: Final depletion F pop | | | D8(0): Scaled Final 1+ pop size | | | D8(inc): Scaled Final 1+ pop size | | | D9: min mat fem pop level | | | D10:Relative increase 1+ pop | | | N9: Need satfn(20) | | | N9: Need satfn(100) | | | N12: Mean downstep | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% |
| GB01AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.98 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.12 | 22.48 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB01AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.72 | 0.91 | 0.97 | 0.83 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.88 | 22.15 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB01BA | 0.01 | 0.10 | 0.42 | 0.00 | 0.06 | 0.29 | 0.09 | 0.40 | 0.67 | 0.16 | 0.57 | 0.79 | 32 | 277 | 483 | 0.35 | 1.64 | 2.61 | 0.77 | 1.00 | 1.00 | 0.65 | 0.95 | 1.00 | 0.00 | 0.03 | 0.17 |
| GB01BB | 0.01 | 0.08 | 0.34 | 0.00 | 0.05 | 0.23 | 0.05 | 0.32 | 0.61 | 0.11 | 0.46 | 0.70 | 8 | 260 | 483 | 0.21 | 1.31 | 2.36 | 0.77 | 1.00 | 1.00 | 0.55 | 0.91 | 1.00 | 0.00 | 0.06 | 0.20 |
| GB01CA | 0.93 | 0.97 | 0.99 | 0.36 | 0.58 | 0.73 | 0.93 | 0.97 | 0.99 | 0.95 | 0.98 | 0.99 | 111 | 261 | 570 | 0.95 | 0.98 | 1.00 | 0.83 | 1.00 | 1.00 | 0.79 | 0.96 | 1.00 | 0.00 | 0.03 | 0.12 |
| GB01CB | 0.89 | 0.96 | 0.98 | 0.26 | 0.49 | 0.65 | 0.89 | 0.96 | 0.98 | 0.90 | 0.97 | 0.99 | 78 | 219 | 481 | 0.91 | 0.97 | 0.99 | 0.83 | 1.00 | 1.00 | 0.69 | 0.89 | 1.00 | 0.00 | 0.07 | 0.18 |
| GB02AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.10 | 22.48 | 0.87 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB02AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.72 | 0.91 | 0.97 | 0.83 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.86 | 22.15 | 0.87 | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB02BA | 0.01 | 0.10 | 0.42 | 0.01 | 0.06 | 0.30 | 0.07 | 0.39 | 0.67 | 0.16 | 0.57 | 0.80 | 27 | 277 | 483 | 0.29 | 1.61 | 2.63 | 0.72 | 1.00 | 1.00 | 0.65 | 0.96 | 1.00 | 0.00 | 0.04 | 0.21 |
| GB02BB | 0.01 | 0.08 | 0.35 | 0.00 | 0.04 | 0.23 | 0.06 | 0.32 | 0.62 | 0.12 | 0.46 | 0.71 | 17 | 260 | 483 | 0.24 | 1.28 | 2.38 | 0.72 | 1.00 | 1.00 | 0.56 | 0.91 | 1.00 | 0.00 | 0.08 | 0.28 |
| GB03AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.08 | 22.48 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB03AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.72 | 0.91 | 0.97 | 0.83 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.84 | 22.14 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.00 | 0.00 | 0.01 |
| GB03BA | 0.01 | 0.10 | 0.41 | 0.01 | 0.06 | 0.29 | 0.09 | 0.40 | 0.67 | 0.19 | 0.57 | 0.80 | 34 | 277 | 483 | 0.35 | 1.62 | 2.58 | 1.00 | 1.00 | 1.00 | 0.70 | 0.97 | 1.00 | 0.00 | 0.02 | 0.16 |
| GB03BB | 0.01 | 0.08 | 0.34 | 0.00 | 0.05 | 0.22 | 0.04 | 0.33 | 0.61 | 0.10 | 0.48 | 0.70 | 0 | 259 | 483 | 0.19 | 1.31 | 2.32 | 1.00 | 1.00 | 1.00 | 0.56 | 0.90 | 1.00 | 0.00 | 0.05 | 0.18 |
| GB04AA | 0.86 | 0.96 | 0.99 | 0.67 | 0.86 | 0.94 | 0.93 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 309 | 567 | 975 | 1.64 | 7.51 | 16.07 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB04AB | 0.85 | 0.96 | 0.98 | 0.66 | 0.84 | 0.93 | 0.92 | 0.98 | 0.99 | 0.96 | 0.99 | 0.99 | 309 | 567 | 975 | 1.62 | 7.47 | 15.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB04BA | 0.11 | 0.28 | 0.73 | 0.08 | 0.20 | 0.59 | 0.49 | 0.69 | 0.87 | 0.66 | 0.82 | 0.93 | 309 | 559 | 1087 | 1.11 | 2.71 | 3.14 | 0.80 | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 0.00 | 0.00 | 0.05 |
| GB04BB | 0.10 | 0.27 | 0.70 | 0.07 | 0.18 | 0.52 | 0.41 | 0.64 | 0.84 | 0.55 | 0.76 | 0.90 | 309 | 559 | 1087 | 0.98 | 2.51 | 3.02 | 0.80 | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 0.00 | 0.00 | 0.08 |
| GB05AA | 0.77 | 1.02 | 1.06 | 0.47 | 0.90 | 1.10 | 0.80 | 0.97 | 0.99 | 0.89 | 0.98 | 1.00 | 137 | 237 | 471 | 2.02 | 14.92 | 28.31 | 0.89 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB05AB | 0.74 | 1.01 | 1.05 | 0.44 | 0.87 | 1.07 | 0.77 | 0.96 | 0.99 | 0.87 | 0.98 | 0.99 | 137 | 237 | 471 | 2.00 | 14.87 | 27.95 | 0.89 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB05BA | 0.11 | 0.45 | 1.06 | 0.05 | 0.23 | 0.81 | 0.27 | 0.64 | 0.93 | 0.40 | 0.78 | 0.96 | 112 | 244 | 433 | 1.86 | 5.69 | 15.20 | 0.80 | 1.00 | 1.00 | 0.87 | 1.00 | 1.00 | 0.00 | 0.00 | 0.09 |
| GB05BB | 0.09 | 0.40 | 1.02 | 0.04 | 0.20 | 0.77 | 0.19 | 0.59 | 0.92 | 0.32 | 0.73 | 0.95 | 106 | 244 | 433 | 1.47 | 5.15 | 14.46 | 0.80 | 1.00 | 1.00 | 0.78 | 0.98 | 1.00 | 0.00 | 0.01 | 0.10 |
| GB06AA | 0.61 | 0.88 | 0.94 | 0.34 | 0.69 | 0.85 | 0.78 | 0.95 | 0.98 | 0.88 | 0.98 | 0.99 | 137 | 252 | 496 | 1.78 | 12.85 | 22.99 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB06AB | 0.59 | 0.87 | 0.94 | 0.33 | 0.66 | 0.84 | 0.76 | 0.94 | 0.98 | 0.86 | 0.96 | 0.99 | 137 | 252 | 496 | 1.75 | 12.74 | 22.53 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB06BA | 0.09 | 0.34 | 0.88 | 0.05 | 0.18 | 0.60 | 0.31 | 0.65 | 0.89 | 0.48 | 0.79 | 0.94 | 146 | 271 | 484 | 1.61 | 4.62 | 10.83 | 0.82 | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 0.00 | 0.00 | 0.06 |
| GB06BB | 0.07 | 0.32 | 0.84 | 0.04 | 0.16 | 0.55 | 0.23 | 0.60 | 0.87 | 0.34 | 0.73 | 0.93 | 146 | 271 | 484 | 1.24 | 4.32 | 10.63 | 0.82 | 1.00 | 1.00 | 0.86 | 1.00 | 1.00 | 0.00 | 0.00 | 0.08 |
| GB07AA | 0.64 | 0.89 | 0.96 | 0.36 | 0.68 | 0.86 | 0.78 | 0.93 | 0.97 | 0.87 | 0.97 | 0.99 | 136 | 250 | 493 | 1.85 | 13.25 | 22.92 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB07AB | 0.62 | 0.87 | 0.95 | 0.34 | 0.66 | 0.84 | 0.75 | 0.92 | 0.97 | 0.85 | 0.95 | 0.98 | 136 | 250 | 493 | 1.81 | 13.06 | 22.53 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB07BA | 0.01 | 0.11 | 0.42 | 0.01 | 0.06 | 0.30 | 0.10 | 0.43 | 0.69 | 0.20 | 0.58 | 0.80 | 37 | 277 | 483 | 0.42 | 1.76 | 2.71 | 0.78 | 1.00 | 1.00 | 0.74 | 0.98 | 1.00 | 0.00 | 0.01 | 0.15 |
| GB07BB | 0.01 | 0.08 | 0.36 | 0.00 | 0.05 | 0.24 | 0.06 | 0.35 | 0.62 | 0.12 | 0.48 | 0.71 | 12 | 266 | 483 | 0.26 | 1.42 | 2.45 | 0.78 | 1.00 | 1.00 | 0.62 | 0.93 | 1.00 | 0.00 | 0.04 | 0.18 |
| GB09AA | 0.69 | 0.91 | 0.98 | 0.41 | 0.71 | 0.89 | 0.85 | 0.96 | 0.98 | 0.90 | 0.97 | 0.99 | 136 | 250 | 493 | 1.89 | 13.72 | 24.69 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB09AB | 0.67 | 0.90 | 0.97 | 0.38 | 0.70 | 0.86 | 0.83 | 0.94 | 0.98 | 0.87 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.54 | 24.06 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB09BA | 0.04 | 0.15 | 0.61 | 0.03 | 0.10 | 0.45 | 0.37 | 0.64 | 0.80 | 0.44 | 0.69 | 0.83 | 153 | 280 | 483 | 1.53 | 2.52 | 3.24 | 0.80 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.00 | 0.00 | 0.09 |
| GB09BB | 0.04 | 0.14 | 0.52 | 0.02 | 0.08 | 0.37 | 0.30 | 0.54 | 0.75 | 0.36 | 0.59 | 0.78 | 139 | 279 | 483 | 1.20 | 2.19 | 3.02 | 0.80 | 1.00 | 1.00 | 0.77 | 0.96 | 1.00 | 0.00 | 0.01 | 0.12 |
| GB10AA | 0.40 | 0.85 | 1.12 | 0.24 | 0.53 | 0.98 | 0.60 | 0.85 | 1.00 | 0.73 | 0.91 | 1.01 | 166 | 293 | 577 | 2.74 | 9.89 | 15.91 | 0.87 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB10AB | 0.37 | 0.83 | 1.10 | 0.23 | 0.50 | 0.93 | 0.56 | 0.82 | 1.00 | 0.68 | 0.89 | 1.01 | 166 | 293 | 577 | 2.47 | 9.60 | 15.65 | 0.87 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB10BA | 0.17 | 0.43 | 1.05 | 0.09 | 0.27 | 0.76 | 0.48 | 0.71 | 0.95 | 0.67 | 0.83 | 0.98 | 146 | 254 | 494 | 2.66 | 6.72 | 9.31 | 0.81 | 1.00 | 1.00 | 0.93 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB10BB | 0.14 | 0.41 | 1.03 | 0.08 | 0.25 | 0.70 | 0.42 | 0.67 | 0.93 | 0.56 | 0.79 | 0.96 | 146 | 254 | 494 | 2.35 | 6.24 | 9.02 | 0.81 | 1.00 | 1.00 | 0.93 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB21AA | 0.44 | 0.52 | 0.53 | 0.30 | 0.49 | 0.56 | 0.86 | 0.96 | 0.98 | 0.92 | 0.98 | 0.99 | 136 | 250 | 473 | 1.01 | 7.94 | 15.98 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB21BA | 0.01 | 0.10 | 0.34 | 0.00 | 0.06 | 0.25 | 0.09 | 0.42 | 0.69 | 0.16 | 0.60 | 0.81 | 32 | 273 | 483 | 0.35 | 1.53 | 2.55 | 0.77 | 1.00 | 1.00 | 0.65 | 0.95 | 1.00 | 0.00 | 0.03 | 0.17 |
| GB22AA | 0.27 | 0.61 | 0.83 | 0.16 | 0.41 | 0.63 | 0.59 | 0.86 | 0.94 | 0.75 | 0.92 | 0.97 | 136 | 250 | 493 | 1.60 | 8.84 | 15.24 | 0.90 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB22BA | 0.00 | 0.01 | 0.06 | 0.00 | 0.00 | 0.04 | 0.00 | 0.16 | 0.45 | 0.00 | 0.31 | 0.62 | 0 | 21 | 278 | 0.00 | 0.14 | 0.54 | 0.77 | 1.00 | 1.00 | 0.48 | 0.79 | 0.98 | 0.01 | 0.13 | 0.25 |
| GB23AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.12 | 22.48 | 0.95 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB23BA | 0.01 | 0.10 | 0.45 | 0.00 | 0.06 | 0.29 | 0.07 | 0.39 | 0.67 | 0.16 | 0.57 | 0.79 | 16 | 277 | 483 | 0.30 | 1.52 | 2.58 | 0.86 | 1.00 | 1.00 | 0.66 | 0.99 | 1.00 | 0.00 | 0.01 | 0.20 |
| GB24AA | 0.50 | 0.87 | 0.96 | 0.29 | 0.66 | 0.85 | 0.70 | 0.93 | 0.97 | 0.82 | 0.96 | 0.99 | 165 | 274 | 523 | 2.49 | 11.08 | 19.21 | 0.93 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB24BA | 0.92 | 0.97 | 0.99 | 0.72 | 0.88 | 0.94 | 0.94 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 167 | 292 | 486 | 2.83 | 13.59 | 29.18 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB25AA | 0.47 | 0.89 | 1.05 | 0.27 | 0.61 | 0.92 | 0.71 | 0.91 | 0.99 | 0.84 | 0.95 | 1.00 | 154 | 269 | 487 | 2.72 | 12.62 | 20.79 | 0.83 | 1.00 | 1.00 | 0.94 | 1.00 | 1.00 | 0.00 | 0.00 | 0.01 |
| GB25BA | 0.07 | 0.19 | 0.47 | 0.04 | 0.12 | 0.32 | 0.19 | 0.54 | 0.75 | 0.32 | 0.70 | 0.86 | 104 | 274 | 477 | 0.98 | 3.06 | 4.30 | 0.81 | 1.00 | 1.00 | 0.84 | 1.00 | 1.00 | 0.00 | 0.00 | 0.10 |

Table B.2. The more important statistics for *SLA*2 (weighted-average). Robustness trials are highlighted.

| | D1: Final depletion 1+ pop | | | D1: Final depletion F pop | | | D8(0): Scaled Final 1+ pop size | | | D8(inc): Scaled Final 1+ pop size | | | D9: min mat fem pop level | | | D10:Relative increase 1+ pop | | | N9: Need satfn(20) | | | N9: Need satfn(100) | | | N12: Mean downstep | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% |
| GB01AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.98 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.12 | 22.48 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB01AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.72 | 0.91 | 0.97 | 0.83 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.88 | 22.15 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB01BA | 0.01 | 0.10 | 0.42 | 0.00 | 0.06 | 0.29 | 0.09 | 0.40 | 0.67 | 0.16 | 0.57 | 0.79 | 32 | 277 | 483 | 0.35 | 1.64 | 2.61 | 0.77 | 1.00 | 1.00 | 0.65 | 0.95 | 1.00 | 0.00 | 0.03 | 0.17 |
| GB01BB | 0.01 | 0.08 | 0.34 | 0.00 | 0.05 | 0.23 | 0.05 | 0.32 | 0.61 | 0.11 | 0.46 | 0.70 | 8 | 260 | 483 | 0.21 | 1.31 | 2.36 | 0.77 | 1.00 | 1.00 | 0.55 | 0.91 | 1.00 | 0.00 | 0.06 | 0.20 |
| GB01CA | 0.93 | 0.97 | 0.99 | 0.36 | 0.58 | 0.73 | 0.93 | 0.97 | 0.99 | 0.95 | 0.98 | 0.99 | 111 | 261 | 570 | 0.95 | 0.98 | 1.00 | 0.83 | 1.00 | 1.00 | 0.79 | 0.96 | 1.00 | 0.00 | 0.03 | 0.12 |
| GB01CB | 0.89 | 0.96 | 0.98 | 0.26 | 0.49 | 0.65 | 0.89 | 0.96 | 0.98 | 0.90 | 0.97 | 0.99 | 78 | 219 | 481 | 0.91 | 0.97 | 0.99 | 0.83 | 1.00 | 1.00 | 0.69 | 0.89 | 1.00 | 0.00 | 0.07 | 0.18 |
| GB02AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.10 | 22.48 | 0.87 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB02AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.72 | 0.91 | 0.97 | 0.83 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.86 | 22.15 | 0.87 | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB02BA | 0.01 | 0.10 | 0.42 | 0.01 | 0.06 | 0.30 | 0.07 | 0.39 | 0.67 | 0.16 | 0.57 | 0.80 | 27 | 277 | 483 | 0.29 | 1.61 | 2.63 | 0.72 | 1.00 | 1.00 | 0.65 | 0.96 | 1.00 | 0.00 | 0.04 | 0.21 |
| GB02BB | 0.01 | 0.08 | 0.35 | 0.00 | 0.04 | 0.23 | 0.06 | 0.32 | 0.62 | 0.12 | 0.46 | 0.71 | 17 | 260 | 483 | 0.24 | 1.28 | 2.38 | 0.72 | 1.00 | 1.00 | 0.56 | 0.91 | 1.00 | 0.00 | 0.08 | 0.28 |
| GB03AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.08 | 22.48 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB03AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.72 | 0.91 | 0.97 | 0.83 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.84 | 22.14 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.00 | 0.00 | 0.01 |
| GB03BA | 0.01 | 0.10 | 0.41 | 0.01 | 0.06 | 0.29 | 0.09 | 0.40 | 0.67 | 0.19 | 0.57 | 0.80 | 34 | 277 | 483 | 0.35 | 1.62 | 2.58 | 1.00 | 1.00 | 1.00 | 0.70 | 0.97 | 1.00 | 0.00 | 0.02 | 0.16 |
| GB03BB | 0.01 | 0.08 | 0.34 | 0.00 | 0.05 | 0.22 | 0.04 | 0.33 | 0.61 | 0.10 | 0.48 | 0.70 | 0 | 259 | 483 | 0.19 | 1.31 | 2.32 | 1.00 | 1.00 | 1.00 | 0.56 | 0.90 | 1.00 | 0.00 | 0.05 | 0.18 |
| GB04AA | 0.86 | 0.96 | 0.99 | 0.67 | 0.86 | 0.94 | 0.93 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 309 | 567 | 975 | 1.64 | 7.51 | 16.07 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB04AB | 0.85 | 0.96 | 0.98 | 0.66 | 0.84 | 0.93 | 0.92 | 0.98 | 0.99 | 0.96 | 0.99 | 0.99 | 309 | 567 | 975 | 1.62 | 7.47 | 15.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB04BA | 0.11 | 0.28 | 0.73 | 0.08 | 0.20 | 0.59 | 0.49 | 0.69 | 0.87 | 0.66 | 0.82 | 0.93 | 309 | 559 | 1087 | 1.11 | 2.71 | 3.14 | 0.80 | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 0.00 | 0.00 | 0.05 |
| GB04BB | 0.10 | 0.27 | 0.70 | 0.07 | 0.18 | 0.52 | 0.41 | 0.64 | 0.84 | 0.55 | 0.76 | 0.90 | 309 | 559 | 1087 | 0.98 | 2.51 | 3.02 | 0.80 | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 0.00 | 0.00 | 0.08 |
| GB05AA | 0.77 | 1.02 | 1.06 | 0.47 | 0.90 | 1.10 | 0.80 | 0.97 | 0.99 | 0.89 | 0.98 | 1.00 | 137 | 237 | 471 | 2.02 | 14.92 | 28.31 | 0.89 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB05AB | 0.74 | 1.01 | 1.05 | 0.44 | 0.87 | 1.07 | 0.77 | 0.96 | 0.99 | 0.87 | 0.98 | 0.99 | 137 | 237 | 471 | 2.00 | 14.87 | 27.95 | 0.89 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB05BA | 0.11 | 0.45 | 1.06 | 0.05 | 0.23 | 0.81 | 0.27 | 0.64 | 0.93 | 0.40 | 0.78 | 0.96 | 112 | 244 | 433 | 1.86 | 5.69 | 15.20 | 0.80 | 1.00 | 1.00 | 0.87 | 1.00 | 1.00 | 0.00 | 0.00 | 0.09 |
| GB05BB | 0.09 | 0.40 | 1.02 | 0.04 | 0.20 | 0.77 | 0.19 | 0.59 | 0.92 | 0.32 | 0.73 | 0.95 | 106 | 244 | 433 | 1.47 | 5.15 | 14.46 | 0.80 | 1.00 | 1.00 | 0.78 | 0.98 | 1.00 | 0.00 | 0.01 | 0.10 |
| GB06AA | 0.61 | 0.88 | 0.94 | 0.34 | 0.69 | 0.85 | 0.78 | 0.95 | 0.98 | 0.88 | 0.98 | 0.99 | 137 | 252 | 496 | 1.78 | 12.85 | 22.99 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB06AB | 0.59 | 0.87 | 0.94 | 0.33 | 0.66 | 0.84 | 0.76 | 0.94 | 0.98 | 0.86 | 0.96 | 0.99 | 137 | 252 | 496 | 1.75 | 12.74 | 22.53 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB06BA | 0.09 | 0.34 | 0.88 | 0.05 | 0.18 | 0.60 | 0.31 | 0.65 | 0.89 | 0.48 | 0.79 | 0.94 | 146 | 271 | 484 | 1.61 | 4.62 | 10.83 | 0.82 | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 0.00 | 0.00 | 0.06 |
| GB06BB | 0.07 | 0.32 | 0.84 | 0.04 | 0.16 | 0.55 | 0.23 | 0.60 | 0.87 | 0.34 | 0.73 | 0.93 | 146 | 271 | 484 | 1.24 | 4.32 | 10.63 | 0.82 | 1.00 | 1.00 | 0.86 | 1.00 | 1.00 | 0.00 | 0.00 | 0.08 |
| GB07AA | 0.64 | 0.89 | 0.96 | 0.36 | 0.68 | 0.86 | 0.78 | 0.93 | 0.97 | 0.87 | 0.97 | 0.99 | 136 | 250 | 493 | 1.85 | 13.25 | 22.92 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB07AB | 0.62 | 0.87 | 0.95 | 0.34 | 0.66 | 0.84 | 0.75 | 0.92 | 0.97 | 0.85 | 0.95 | 0.98 | 136 | 250 | 493 | 1.81 | 13.06 | 22.53 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB07BA | 0.01 | 0.11 | 0.42 | 0.01 | 0.06 | 0.30 | 0.10 | 0.43 | 0.69 | 0.20 | 0.58 | 0.80 | 37 | 277 | 483 | 0.42 | 1.76 | 2.71 | 0.78 | 1.00 | 1.00 | 0.74 | 0.98 | 1.00 | 0.00 | 0.01 | 0.15 |
| GB07BB | 0.01 | 0.08 | 0.36 | 0.00 | 0.05 | 0.24 | 0.06 | 0.35 | 0.62 | 0.12 | 0.48 | 0.71 | 12 | 266 | 483 | 0.26 | 1.42 | 2.45 | 0.78 | 1.00 | 1.00 | 0.62 | 0.93 | 1.00 | 0.00 | 0.04 | 0.18 |
| GB09AA | 0.69 | 0.91 | 0.98 | 0.41 | 0.71 | 0.89 | 0.85 | 0.96 | 0.98 | 0.90 | 0.97 | 0.99 | 136 | 250 | 493 | 1.89 | 13.72 | 24.69 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB09AB | 0.67 | 0.90 | 0.97 | 0.38 | 0.70 | 0.86 | 0.83 | 0.94 | 0.98 | 0.87 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.54 | 24.06 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB09BA | 0.04 | 0.15 | 0.61 | 0.03 | 0.10 | 0.45 | 0.37 | 0.64 | 0.80 | 0.44 | 0.69 | 0.83 | 153 | 280 | 483 | 1.53 | 2.52 | 3.24 | 0.80 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.00 | 0.00 | 0.09 |
| GB09BB | 0.04 | 0.14 | 0.52 | 0.02 | 0.08 | 0.37 | 0.30 | 0.54 | 0.75 | 0.36 | 0.59 | 0.78 | 139 | 279 | 483 | 1.20 | 2.19 | 3.02 | 0.80 | 1.00 | 1.00 | 0.77 | 0.96 | 1.00 | 0.00 | 0.01 | 0.12 |
| GB10AA | 0.40 | 0.85 | 1.12 | 0.24 | 0.53 | 0.98 | 0.60 | 0.85 | 1.00 | 0.73 | 0.91 | 1.01 | 166 | 293 | 577 | 2.74 | 9.89 | 15.91 | 0.87 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB10AB | 0.37 | 0.83 | 1.10 | 0.23 | 0.50 | 0.93 | 0.56 | 0.82 | 1.00 | 0.68 | 0.89 | 1.01 | 166 | 293 | 577 | 2.47 | 9.60 | 15.65 | 0.87 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB10BA | 0.17 | 0.43 | 1.05 | 0.09 | 0.27 | 0.76 | 0.48 | 0.71 | 0.95 | 0.67 | 0.83 | 0.98 | 146 | 254 | 494 | 2.66 | 6.72 | 9.31 | 0.81 | 1.00 | 1.00 | 0.93 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB10BB | 0.14 | 0.41 | 1.03 | 0.08 | 0.25 | 0.70 | 0.42 | 0.67 | 0.93 | 0.56 | 0.79 | 0.96 | 146 | 254 | 494 | 2.35 | 6.24 | 9.02 | 0.81 | 1.00 | 1.00 | 0.93 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB21AA | 0.44 | 0.52 | 0.53 | 0.30 | 0.49 | 0.56 | 0.86 | 0.96 | 0.98 | 0.92 | 0.98 | 0.99 | 136 | 250 | 473 | 1.01 | 7.94 | 15.98 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB21BA | 0.01 | 0.10 | 0.34 | 0.00 | 0.06 | 0.25 | 0.09 | 0.42 | 0.69 | 0.16 | 0.60 | 0.81 | 32 | 273 | 483 | 0.35 | 1.53 | 2.55 | 0.77 | 1.00 | 1.00 | 0.65 | 0.95 | 1.00 | 0.00 | 0.03 | 0.17 |
| GB22AA | 0.27 | 0.61 | 0.83 | 0.16 | 0.41 | 0.63 | 0.59 | 0.86 | 0.94 | 0.75 | 0.92 | 0.97 | 136 | 250 | 493 | 1.60 | 8.84 | 15.24 | 0.90 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB22BA | 0.00 | 0.01 | 0.06 | 0.00 | 0.00 | 0.04 | 0.00 | 0.16 | 0.45 | 0.00 | 0.31 | 0.62 | 0 | 21 | 278 | 0.00 | 0.14 | 0.54 | 0.77 | 1.00 | 1.00 | 0.48 | 0.79 | 0.98 | 0.01 | 0.13 | 0.25 |
| GB23AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.12 | 22.48 | 0.95 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB23BA | 0.01 | 0.10 | 0.45 | 0.00 | 0.06 | 0.29 | 0.07 | 0.39 | 0.67 | 0.16 | 0.57 | 0.79 | 16 | 277 | 483 | 0.30 | 1.52 | 2.58 | 0.86 | 1.00 | 1.00 | 0.66 | 0.99 | 1.00 | 0.00 | 0.01 | 0.20 |
| GB24AA | 0.50 | 0.87 | 0.96 | 0.29 | 0.66 | 0.85 | 0.70 | 0.93 | 0.97 | 0.82 | 0.96 | 0.99 | 165 | 274 | 523 | 2.49 | 11.08 | 19.21 | 0.93 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB24BA | 0.92 | 0.97 | 0.99 | 0.72 | 0.88 | 0.94 | 0.94 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 167 | 292 | 486 | 2.83 | 13.59 | 29.18 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB25AA | 0.47 | 0.89 | 1.05 | 0.27 | 0.61 | 0.92 | 0.71 | 0.91 | 0.99 | 0.84 | 0.95 | 1.00 | 154 | 269 | 487 | 2.72 | 12.62 | 20.79 | 0.83 | 1.00 | 1.00 | 0.94 | 1.00 | 1.00 | 0.00 | 0.00 | 0.01 |
| GB25BA | 0.07 | 0.19 | 0.47 | 0.04 | 0.12 | 0.32 | 0.19 | 0.54 | 0.75 | 0.32 | 0.70 | 0.86 | 104 | 274 | 477 | 0.98 | 3.06 | 4.30 | 0.81 | 1.00 | 1.00 | 0.84 | 1.00 | 1.00 | 0.00 | 0.00 | 0.10 |

Table B.3. The more important statistics for *SLA*3 (variant of weighted-average). Robustness trials are highlighted.

| | D1: Final depletion 1+ pop | | | D1: Final depletion F pop | | | D8(0): Scaled Final 1+ pop size | | | D8(inc): Scaled Final 1+ pop size | | | D9: min mat fem pop level | | | D10:Relative increase 1+ pop | | | N9: Need satfn(20) | | | N9: Need satfn(100) | | | N12: Mean downstep | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% |
| GB01AA | 0.623 | 0.88 | 0.962 | 0.363 | 0.674 | 0.867 | 0.79 | 0.93 | 0.97 | 0.89 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.13 | 22.53 | 1.00 | 1.00 | 1.00 | 0.90 | 0.98 | 1.00 | 0.00 | 0.02 | 0.05 |
| GB01AB | 0.612 | 0.869 | 0.954 | 0.35 | 0.648 | 0.835 | 0.78 | 0.92 | 0.97 | 0.87 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.99 | 22.15 | 1.00 | 1.00 | 1.00 | 0.85 | 0.98 | 1.00 | 0.00 | 0.02 | 0.04 |
| GB01BA | 0.025 | 0.112 | 0.47 | 0.016 | 0.07 | 0.309 | 0.20 | 0.46 | 0.67 | 0.44 | 0.65 | 0.80 | 99 | 279 | 483 | 0.81 | 1.82 | 2.64 | 1.00 | 1.00 | 1.00 | 0.42 | 0.80 | 0.98 | 0.02 | 0.07 | 0.19 |
| GB01BB | 0.024 | 0.1 | 0.441 | 0.015 | 0.067 | 0.271 | 0.20 | 0.43 | 0.62 | 0.40 | 0.62 | 0.74 | 97 | 275 | 483 | 0.8 | 1.66 | 2.49 | 1.00 | 1.00 | 1.00 | 0.37 | 0.70 | 0.97 | 0.02 | 0.09 | 0.20 |
| GB01CA | 0.973 | 0.982 | 0.989 | 0.568 | 0.682 | 0.766 | 0.97 | 0.98 | 0.99 | 0.99 | 0.99 | 1.00 | 168 | 309 | 577 | 0.98 | 0.99 | 1 | 1.00 | 1.00 | 1.00 | 0.43 | 0.63 | 0.95 | 0.03 | 0.12 | 0.19 |
| GB01CB | 0.966 | 0.98 | 0.988 | 0.544 | 0.666 | 0.754 | 0.97 | 0.98 | 0.99 | 0.97 | 0.99 | 0.99 | 168 | 300 | 517 | 0.97 | 0.99 | 1 | 1.00 | 1.00 | 1.00 | 0.38 | 0.52 | 0.90 | 0.04 | 0.13 | 0.21 |
| GB02AA | 0.628 | 0.888 | 0.963 | 0.369 | 0.68 | 0.867 | 0.80 | 0.93 | 0.97 | 0.90 | 0.97 | 0.99 | 136 | 250 | 493 | 1.86 | 13.24 | 22.82 | 0.76 | 0.86 | 1.00 | 0.84 | 0.95 | 1.00 | 0.00 | 0.01 | 0.03 |
| GB02AB | 0.615 | 0.874 | 0.954 | 0.356 | 0.653 | 0.838 | 0.80 | 0.92 | 0.97 | 0.89 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 13.03 | 22.43 | 0.76 | 0.86 | 1.00 | 0.82 | 0.95 | 1.00 | 0.00 | 0.01 | 0.02 |
| GB02BA | 0.028 | 0.114 | 0.47 | 0.017 | 0.073 | 0.322 | 0.25 | 0.46 | 0.67 | 0.48 | 0.67 | 0.80 | 122 | 279 | 483 | 0.92 | 1.87 | 2.73 | 0.76 | 0.83 | 1.00 | 0.39 | 0.80 | 0.99 | 0.01 | 0.05 | 0.14 |
| GB02BB | 0.028 | 0.1 | 0.423 | 0.015 | 0.06 | 0.262 | 0.21 | 0.44 | 0.62 | 0.43 | 0.62 | 0.75 | 122 | 277 | 483 | 0.87 | 1.7 | 2.52 | 0.76 | 0.83 | 1.00 | 0.31 | 0.72 | 0.94 | 0.01 | 0.06 | 0.17 |
| GB03AA | 0.634 | 0.882 | 0.962 | 0.363 | 0.674 | 0.865 | 0.80 | 0.93 | 0.97 | 0.90 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.08 | 22.52 | 1.00 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.00 | 0.00 | 0.05 |
| GB03AB | 0.621 | 0.87 | 0.954 | 0.349 | 0.65 | 0.835 | 0.79 | 0.91 | 0.97 | 0.88 | 0.95 | 0.98 | 136 | 250 | 493 | 1.84 | 12.95 | 22.21 | 1.00 | 1.00 | 1.00 | 0.84 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB03BA | 0.026 | 0.118 | 0.473 | 0.017 | 0.078 | 0.339 | 0.20 | 0.48 | 0.67 | 0.41 | 0.68 | 0.81 | 99 | 279 | 483 | 0.82 | 1.86 | 2.72 | 1.00 | 1.00 | 1.00 | 0.40 | 0.74 | 1.00 | 0.00 | 0.08 | 0.18 |
| GB03BB | 0.026 | 0.113 | 0.451 | 0.017 | 0.07 | 0.313 | 0.20 | 0.45 | 0.63 | 0.41 | 0.64 | 0.76 | 98 | 275 | 483 | 0.81 | 1.78 | 2.53 | 1.00 | 1.00 | 1.00 | 0.36 | 0.63 | 1.00 | 0.00 | 0.09 | 0.19 |
| GB04AA | 0.856 | 0.964 | 0.986 | 0.667 | 0.863 | 0.937 | 0.93 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 309 | 567 | 975 | 1.64 | 7.51 | 16.07 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB04AB | 0.85 | 0.957 | 0.983 | 0.657 | 0.842 | 0.925 | 0.92 | 0.98 | 0.99 | 0.96 | 0.99 | 0.99 | 309 | 567 | 975 | 1.62 | 7.47 | 15.92 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB04BA | 0.122 | 0.286 | 0.761 | 0.087 | 0.202 | 0.592 | 0.54 | 0.70 | 0.87 | 0.73 | 0.82 | 0.93 | 309 | 559 | 1087 | 1.26 | 2.68 | 3.15 | 1.00 | 1.00 | 1.00 | 0.81 | 0.98 | 1.00 | 0.00 | 0.02 | 0.09 |
| GB04BB | 0.113 | 0.27 | 0.702 | 0.077 | 0.184 | 0.545 | 0.51 | 0.65 | 0.84 | 0.65 | 0.77 | 0.90 | 309 | 559 | 1087 | 1.13 | 2.52 | 3.02 | 1.00 | 1.00 | 1.00 | 0.71 | 0.97 | 1.00 | 0.00 | 0.02 | 0.13 |
| GB05AA | 0.773 | 1.016 | 1.055 | 0.472 | 0.903 | 1.102 | 0.82 | 0.97 | 0.99 | 0.90 | 0.98 | 1.00 | 137 | 237 | 471 | 2.02 | 14.92 | 28.35 | 1.00 | 1.00 | 1.00 | 0.87 | 0.98 | 1.00 | 0.00 | 0.02 | 0.06 |
| GB05AB | 0.76 | 1.009 | 1.051 | 0.456 | 0.875 | 1.073 | 0.80 | 0.96 | 0.99 | 0.88 | 0.98 | 0.99 | 137 | 237 | 471 | 2.00 | 14.87 | 28.01 | 1.00 | 1.00 | 1.00 | 0.83 | 0.98 | 1.00 | 0.00 | 0.02 | 0.05 |
| GB05BA | 0.127 | 0.465 | 1.068 | 0.08 | 0.243 | 0.829 | 0.38 | 0.66 | 0.93 | 0.60 | 0.79 | 0.96 | 112 | 244 | 433 | 2.37 | 5.89 | 15.21 | 1.00 | 1.00 | 1.00 | 0.61 | 0.90 | 1.00 | 0.00 | 0.05 | 0.13 |
| GB05BB | 0.124 | 0.443 | 1.036 | 0.077 | 0.226 | 0.776 | 0.35 | 0.62 | 0.92 | 0.57 | 0.76 | 0.95 | 112 | 244 | 433 | 2.36 | 5.56 | 14.50 | 1.00 | 1.00 | 1.00 | 0.51 | 0.84 | 0.99 | 0.00 | 0.05 | 0.14 |
| GB06AA | 0.615 | 0.878 | 0.943 | 0.353 | 0.692 | 0.852 | 0.80 | 0.95 | 0.98 | 0.89 | 0.98 | 0.99 | 137 | 252 | 496 | 1.78 | 12.85 | 23.03 | 1.00 | 1.00 | 1.00 | 0.91 | 0.99 | 1.00 | 0.00 | 0.01 | 0.05 |
| GB06AB | 0.599 | 0.867 | 0.937 | 0.341 | 0.659 | 0.834 | 0.77 | 0.94 | 0.98 | 0.87 | 0.96 | 0.99 | 137 | 252 | 496 | 1.76 | 12.74 | 22.61 | 1.00 | 1.00 | 1.00 | 0.86 | 0.98 | 1.00 | 0.00 | 0.01 | 0.05 |
| GB06BA | 0.105 | 0.352 | 0.894 | 0.062 | 0.187 | 0.621 | 0.40 | 0.65 | 0.90 | 0.62 | 0.80 | 0.94 | 146 | 271 | 484 | 1.87 | 4.76 | 10.84 | 1.00 | 1.00 | 1.00 | 0.70 | 0.94 | 1.00 | 0.00 | 0.04 | 0.13 |
| GB06BB | 0.1 | 0.332 | 0.84 | 0.06 | 0.175 | 0.56 | 0.38 | 0.62 | 0.87 | 0.57 | 0.76 | 0.93 | 146 | 271 | 484 | 1.78 | 4.45 | 10.65 | 1.00 | 1.00 | 1.00 | 0.59 | 0.91 | 1.00 | 0.00 | 0.04 | 0.13 |
| GB07AA | 0.641 | 0.886 | 0.961 | 0.379 | 0.684 | 0.859 | 0.79 | 0.93 | 0.97 | 0.88 | 0.97 | 0.99 | 136 | 250 | 493 | 1.85 | 13.26 | 23.02 | 1.00 | 1.00 | 1.00 | 0.91 | 0.99 | 1.00 | 0.00 | 0.01 | 0.05 |
| GB07AB | 0.626 | 0.871 | 0.953 | 0.365 | 0.657 | 0.837 | 0.77 | 0.92 | 0.97 | 0.87 | 0.95 | 0.98 | 136 | 250 | 493 | 1.82 | 13.08 | 22.64 | 1.00 | 1.00 | 1.00 | 0.86 | 0.98 | 1.00 | 0.00 | 0.01 | 0.04 |
| GB07BA | 0.027 | 0.118 | 0.473 | 0.017 | 0.074 | 0.322 | 0.24 | 0.49 | 0.69 | 0.46 | 0.66 | 0.81 | 126 | 279 | 483 | 0.90 | 1.91 | 2.73 | 1.00 | 1.00 | 1.00 | 0.46 | 0.83 | 0.99 | 0.01 | 0.07 | 0.17 |
| GB07BB | 0.025 | 0.104 | 0.403 | 0.015 | 0.067 | 0.265 | 0.23 | 0.45 | 0.64 | 0.43 | 0.63 | 0.75 | 124 | 279 | 483 | 0.89 | 1.74 | 2.55 | 1.00 | 1.00 | 1.00 | 0.40 | 0.74 | 0.98 | 0.02 | 0.08 | 0.20 |
| GB09AA | 0.693 | 0.906 | 0.976 | 0.413 | 0.712 | 0.888 | 0.88 | 0.96 | 0.98 | 0.92 | 0.97 | 0.99 | 136 | 250 | 493 | 1.89 | 13.72 | 24.88 | 1.00 | 1.00 | 1.00 | 0.92 | 0.99 | 1.00 | 0.00 | 0.01 | 0.05 |
| GB09AB | 0.68 | 0.902 | 0.965 | 0.4 | 0.7 | 0.859 | 0.86 | 0.95 | 0.98 | 0.91 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.55 | 24.42 | 1.00 | 1.00 | 1.00 | 0.90 | 0.98 | 1.00 | 0.00 | 0.01 | 0.04 |
| GB09BA | 0.059 | 0.163 | 0.62 | 0.038 | 0.111 | 0.481 | 0.54 | 0.68 | 0.80 | 0.61 | 0.73 | 0.83 | 153 | 280 | 483 | 1.87 | 2.70 | 3.28 | 1.00 | 1.00 | 1.00 | 0.58 | 0.89 | 0.99 | 0.01 | 0.06 | 0.14 |
| GB09BB | 0.058 | 0.153 | 0.55 | 0.037 | 0.098 | 0.397 | 0.47 | 0.63 | 0.76 | 0.55 | 0.68 | 0.79 | 153 | 280 | 483 | 1.81 | 2.49 | 3.07 | 1.00 | 1.00 | 1.00 | 0.48 | 0.80 | 0.98 | 0.02 | 0.05 | 0.17 |
| GB10AA | 0.414 | 0.842 | 1.116 | 0.243 | 0.536 | 0.978 | 0.62 | 0.85 | 1.00 | 0.78 | 0.92 | 1.01 | 166 | 293 | 577 | 2.78 | 10.02 | 15.91 | 1.00 | 1.00 | 1.00 | 0.86 | 0.99 | 1.00 | 0.00 | 0.01 | 0.06 |
| GB10AB | 0.399 | 0.825 | 1.102 | 0.233 | 0.514 | 0.936 | 0.58 | 0.83 | 1.00 | 0.73 | 0.89 | 1.01 | 166 | 293 | 577 | 2.67 | 9.76 | 15.65 | 1.00 | 1.00 | 1.00 | 0.81 | 0.98 | 1.00 | 0.00 | 0.01 | 0.05 |
| GB10BA | 0.187 | 0.437 | 1.057 | 0.103 | 0.269 | 0.77 | 0.52 | 0.72 | 0.94 | 0.72 | 0.84 | 0.98 | 146 | 254 | 494 | 3.03 | 6.83 | 9.45 | 1.00 | 1.00 | 1.00 | 0.77 | 0.96 | 1.00 | 0.00 | 0.03 | 0.08 |
| GB10BB | 0.182 | 0.412 | 1.035 | 0.095 | 0.256 | 0.724 | 0.49 | 0.69 | 0.94 | 0.67 | 0.80 | 0.96 | 146 | 254 | 494 | 2.86 | 6.42 | 9.07 | 1.00 | 1.00 | 1.00 | 0.69 | 0.94 | 1.00 | 0.00 | 0.03 | 0.08 |
| GB21AA | 0.441 | 0.518 | 0.533 | 0.303 | 0.494 | 0.563 | 0.86 | 0.96 | 0.98 | 0.92 | 0.98 | 0.99 | 136 | 250 | 489 | 1.01 | 7.94 | 16.14 | 1.00 | 1.00 | 1.00 | 0.88 | 0.98 | 1.00 | 0.00 | 0.02 | 0.05 |
| GB21BA | 0.025 | 0.11 | 0.358 | 0.016 | 0.07 | 0.266 | 0.21 | 0.49 | 0.71 | 0.44 | 0.67 | 0.83 | 98 | 279 | 483 | 0.72 | 1.74 | 2.56 | 1.00 | 1.00 | 1.00 | 0.42 | 0.79 | 0.98 | 0.02 | 0.07 | 0.19 |
| GB22AA | 0.293 | 0.616 | 0.83 | 0.171 | 0.412 | 0.633 | 0.64 | 0.86 | 0.94 | 0.79 | 0.93 | 0.97 | 136 | 250 | 493 | 1.61 | 8.91 | 15.27 | 1.00 | 1.00 | 1.00 | 0.87 | 0.98 | 1.00 | 0.00 | 0.02 | 0.05 |
| GB22BA | 0 | 0.014 | 0.073 | 0 | 0.01 | 0.058 | 0.00 | 0.27 | 0.50 | 0.00 | 0.52 | 0.71 | 0 | 61 | 290 | 0.00 | 0.23 | 0.59 | 1.00 | 1.00 | 1.00 | 0.36 | 0.56 | 0.94 | 0.07 | 0.15 | 0.20 |
| GB23AA | 0.623 | 0.88 | 0.962 | 0.363 | 0.674 | 0.867 | 0.80 | 0.93 | 0.98 | 0.89 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.13 | 22.53 | 1.00 | 1.00 | 1.00 | 0.86 | 0.98 | 1.00 | 0.00 | 0.01 | 0.06 |
| GB23BA | 0.029 | 0.112 | 0.47 | 0.019 | 0.07 | 0.339 | 0.23 | 0.46 | 0.67 | 0.45 | 0.67 | 0.81 | 115 | 280 | 483 | 0.96 | 1.78 | 2.65 | 0.77 | 1.00 | 1.00 | 0.39 | 0.80 | 0.98 | 0.01 | 0.07 | 0.18 |
| GB24AA | 0.519 | 0.872 | 0.958 | 0.298 | 0.658 | 0.852 | 0.71 | 0.92 | 0.97 | 0.83 | 0.96 | 0.99 | 165 | 274 | 523 | 2.49 | 11.10 | 19.23 | 1.00 | 1.00 | 1.00 | 0.90 | 0.99 | 1.00 | 0.00 | 0.02 | 0.05 |
| GB24BA | 0.922 | 0.973 | 0.988 | 0.717 | 0.878 | 0.936 | 0.94 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 167 | 292 | 486 | 2.83 | 13.59 | 29.18 | 1.00 | 1.00 | 1.00 | 0.94 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB25AA | 0.469 | 0.899 | 1.045 | 0.28 | 0.617 | 0.921 | 0.72 | 0.91 | 0.99 | 0.85 | 0.95 | 1.00 | 154 | 269 | 487 | 2.72 | 12.66 | 21.23 | 1.00 | 1.00 | 1.00 | 0.89 | 0.99 | 1.00 | 0.00 | 0.01 | 0.05 |
| GB25BA | 0.101 | 0.203 | 0.481 | 0.052 | 0.127 | 0.322 | 0.35 | 0.56 | 0.76 | 0.57 | 0.74 | 0.86 | 149 | 274 | 477 | 1.95 | 3.23 | 4.31 | 1.00 | 1.00 | 1.00 | 0.53 | 0.89 | 1.00 | 0.00 | 0.05 | 0.14 |

Table B.4. The more important statistics for *SLA*4 (variant of weighted-average). Robustness trials are highlighted.

| | D1: Final depletion 1+ pop | | | D1: Final depletion F pop | | | D8(0): Scaled Final 1+ pop size | | | D8(inc): Scaled Final 1+ pop size | | | D9: min mat fem pop level | | | D10:Relative increase 1+ pop | | | N9: Need satfn(20) | | | N9: Need satfn(100) | | | N12: Mean downstep | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% | 5% | Median | 96% |
| GB01AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.08 | 22.48 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB01AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.72 | 0.91 | 0.97 | 0.83 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.85 | 22.15 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB01BA | 0.01 | 0.10 | 0.40 | 0.01 | 0.06 | 0.28 | 0.11 | 0.40 | 0.67 | 0.24 | 0.56 | 0.79 | 49 | 277 | 483 | 0.49 | 1.54 | 2.61 | 1.00 | 1.00 | 1.00 | 0.63 | 1.00 | 1.00 | 0.00 | 0.00 | 0.17 |
| GB01BB | 0.01 | 0.08 | 0.34 | 0.00 | 0.04 | 0.22 | 0.08 | 0.31 | 0.61 | 0.13 | 0.44 | 0.70 | 10 | 256 | 483 | 0.32 | 1.24 | 2.36 | 1.00 | 1.00 | 1.00 | 0.50 | 0.95 | 1.00 | 0.00 | 0.03 | 0.17 |
| GB01CA | 0.94 | 0.97 | 0.99 | 0.39 | 0.58 | 0.73 | 0.94 | 0.97 | 0.99 | 0.95 | 0.98 | 0.99 | 114 | 256 | 566 | 0.95 | 0.98 | 1.00 | 1.00 | 1.00 | 1.00 | 0.73 | 0.97 | 1.00 | 0.00 | 0.03 | 0.12 |
| GB01CB | 0.90 | 0.95 | 0.98 | 0.25 | 0.46 | 0.62 | 0.90 | 0.95 | 0.98 | 0.91 | 0.96 | 0.98 | 89 | 208 | 481 | 0.91 | 0.96 | 0.99 | 1.00 | 1.00 | 1.00 | 0.62 | 0.91 | 1.00 | 0.00 | 0.05 | 0.15 |
| GB02AA | 0.61 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.76 | 0.93 | 0.97 | 0.88 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.16 | 22.48 | 0.81 | 1.00 | 1.00 | 0.94 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB02AB | 0.59 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.74 | 0.91 | 0.97 | 0.86 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.96 | 22.15 | 0.81 | 1.00 | 1.00 | 0.93 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB02BA | 0.01 | 0.10 | 0.42 | 0.01 | 0.06 | 0.30 | 0.08 | 0.39 | 0.67 | 0.18 | 0.57 | 0.79 | 31 | 277 | 483 | 0.34 | 1.61 | 2.61 | 0.80 | 0.93 | 1.00 | 0.66 | 0.97 | 1.00 | 0.00 | 0.01 | 0.12 |
| GB02BB | 0.01 | 0.07 | 0.34 | 0.00 | 0.04 | 0.23 | 0.07 | 0.30 | 0.61 | 0.12 | 0.44 | 0.70 | 0 | 253 | 483 | 0.27 | 1.23 | 2.37 | 0.80 | 0.93 | 1.00 | 0.54 | 0.95 | 1.00 | 0.00 | 0.01 | 0.14 |
| GB03AA | 0.62 | 0.88 | 0.96 | 0.34 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.08 | 22.48 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB03AB | 0.60 | 0.87 | 0.95 | 0.33 | 0.65 | 0.84 | 0.73 | 0.91 | 0.97 | 0.84 | 0.95 | 0.98 | 136 | 250 | 493 | 1.83 | 12.84 | 22.14 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB03BA | 0.02 | 0.10 | 0.40 | 0.01 | 0.06 | 0.28 | 0.10 | 0.40 | 0.67 | 0.23 | 0.59 | 0.79 | 39 | 277 | 483 | 0.41 | 1.65 | 2.58 | 1.00 | 1.00 | 1.00 | 0.63 | 1.00 | 1.00 | 0.00 | 0.00 | 0.15 |
| GB03BB | 0.01 | 0.08 | 0.34 | 0.00 | 0.05 | 0.22 | 0.10 | 0.34 | 0.60 | 0.16 | 0.48 | 0.70 | 14 | 260 | 483 | 0.38 | 1.31 | 2.32 | 1.00 | 1.00 | 1.00 | 0.51 | 0.92 | 1.00 | 0.00 | 0.02 | 0.18 |
| GB04AA | 0.86 | 0.96 | 0.99 | 0.67 | 0.86 | 0.94 | 0.93 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 309 | 567 | 975 | 1.64 | 7.51 | 16.07 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB04AB | 0.85 | 0.96 | 0.98 | 0.66 | 0.84 | 0.93 | 0.92 | 0.98 | 0.99 | 0.96 | 0.99 | 0.99 | 309 | 567 | 975 | 1.62 | 7.47 | 15.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB04BA | 0.11 | 0.28 | 0.73 | 0.08 | 0.20 | 0.59 | 0.48 | 0.69 | 0.87 | 0.65 | 0.82 | 0.93 | 309 | 559 | 1087 | 1.11 | 2.67 | 3.14 | 1.00 | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB04BB | 0.10 | 0.27 | 0.70 | 0.07 | 0.18 | 0.51 | 0.40 | 0.64 | 0.84 | 0.54 | 0.76 | 0.90 | 309 | 559 | 1087 | 0.94 | 2.47 | 3.02 | 1.00 | 1.00 | 1.00 | 0.94 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB05AA | 0.76 | 1.02 | 1.06 | 0.47 | 0.90 | 1.10 | 0.80 | 0.97 | 0.99 | 0.89 | 0.98 | 1.00 | 137 | 237 | 471 | 2.02 | 14.92 | 28.31 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB05AB | 0.74 | 1.01 | 1.05 | 0.44 | 0.87 | 1.07 | 0.78 | 0.96 | 0.99 | 0.86 | 0.98 | 0.99 | 137 | 237 | 471 | 2.00 | 14.87 | 27.95 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB05BA | 0.11 | 0.45 | 1.06 | 0.06 | 0.23 | 0.81 | 0.29 | 0.64 | 0.93 | 0.46 | 0.77 | 0.96 | 108 | 244 | 433 | 1.88 | 5.72 | 15.20 | 1.00 | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 0.00 | 0.00 | 0.07 |
| GB05BB | 0.09 | 0.41 | 1.02 | 0.05 | 0.21 | 0.77 | 0.23 | 0.58 | 0.92 | 0.35 | 0.71 | 0.95 | 105 | 244 | 433 | 1.54 | 5.19 | 14.46 | 1.00 | 1.00 | 1.00 | 0.78 | 1.00 | 1.00 | 0.00 | 0.00 | 0.06 |
| GB06AA | 0.61 | 0.88 | 0.94 | 0.34 | 0.69 | 0.85 | 0.78 | 0.95 | 0.98 | 0.88 | 0.98 | 0.99 | 137 | 252 | 496 | 1.78 | 12.85 | 22.99 | 1.00 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB06AB | 0.59 | 0.87 | 0.94 | 0.33 | 0.66 | 0.83 | 0.76 | 0.94 | 0.98 | 0.86 | 0.96 | 0.99 | 137 | 252 | 496 | 1.75 | 12.74 | 22.53 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB06BA | 0.09 | 0.34 | 0.88 | 0.05 | 0.18 | 0.60 | 0.33 | 0.64 | 0.89 | 0.50 | 0.79 | 0.94 | 146 | 271 | 484 | 1.60 | 4.62 | 10.83 | 1.00 | 1.00 | 1.00 | 0.89 | 1.00 | 1.00 | 0.00 | 0.00 | 0.06 |
| GB06BB | 0.07 | 0.31 | 0.84 | 0.04 | 0.16 | 0.55 | 0.25 | 0.59 | 0.87 | 0.37 | 0.73 | 0.93 | 145 | 271 | 484 | 1.21 | 4.27 | 10.63 | 1.00 | 1.00 | 1.00 | 0.87 | 1.00 | 1.00 | 0.00 | 0.00 | 0.05 |
| GB07AA | 0.64 | 0.89 | 0.96 | 0.36 | 0.68 | 0.86 | 0.78 | 0.93 | 0.97 | 0.87 | 0.97 | 0.99 | 136 | 250 | 493 | 1.85 | 13.22 | 22.92 | 1.00 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB07AB | 0.62 | 0.87 | 0.95 | 0.34 | 0.66 | 0.84 | 0.75 | 0.92 | 0.97 | 0.84 | 0.95 | 0.98 | 136 | 250 | 493 | 1.81 | 13.02 | 22.53 | 1.00 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB07BA | 0.02 | 0.11 | 0.41 | 0.01 | 0.06 | 0.29 | 0.13 | 0.42 | 0.69 | 0.27 | 0.58 | 0.80 | 58 | 277 | 483 | 0.58 | 1.66 | 2.71 | 1.00 | 1.00 | 1.00 | 0.78 | 1.00 | 1.00 | 0.00 | 0.00 | 0.14 |
| GB07BB | 0.01 | 0.08 | 0.35 | 0.00 | 0.05 | 0.23 | 0.08 | 0.33 | 0.61 | 0.13 | 0.45 | 0.71 | 12 | 256 | 483 | 0.32 | 1.33 | 2.45 | 1.00 | 1.00 | 1.00 | 0.63 | 0.97 | 1.00 | 0.00 | 0.01 | 0.16 |
| GB09AA | 0.69 | 0.91 | 0.98 | 0.41 | 0.71 | 0.89 | 0.85 | 0.96 | 0.98 | 0.90 | 0.97 | 0.99 | 136 | 250 | 493 | 1.89 | 13.70 | 24.59 | 1.00 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB09AB | 0.67 | 0.90 | 0.97 | 0.38 | 0.70 | 0.86 | 0.83 | 0.94 | 0.98 | 0.87 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.51 | 23.98 | 1.00 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB09BA | 0.05 | 0.15 | 0.60 | 0.03 | 0.10 | 0.44 | 0.41 | 0.63 | 0.80 | 0.47 | 0.68 | 0.83 | 153 | 280 | 483 | 1.56 | 2.49 | 3.24 | 1.00 | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 0.00 | 0.00 | 0.07 |
| GB09BB | 0.04 | 0.14 | 0.52 | 0.02 | 0.08 | 0.36 | 0.32 | 0.53 | 0.75 | 0.37 | 0.57 | 0.78 | 144 | 279 | 483 | 1.29 | 2.12 | 3.02 | 1.00 | 1.00 | 1.00 | 0.81 | 1.00 | 1.00 | 0.00 | 0.00 | 0.10 |
| GB10AA | 0.40 | 0.84 | 1.12 | 0.24 | 0.53 | 0.98 | 0.61 | 0.85 | 1.00 | 0.74 | 0.91 | 1.01 | 166 | 293 | 577 | 2.75 | 9.89 | 15.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB10AB | 0.37 | 0.82 | 1.10 | 0.23 | 0.50 | 0.93 | 0.56 | 0.82 | 1.00 | 0.68 | 0.89 | 1.01 | 166 | 293 | 577 | 2.47 | 9.60 | 15.65 | 1.00 | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB10BA | 0.16 | 0.43 | 1.05 | 0.09 | 0.26 | 0.76 | 0.48 | 0.71 | 0.95 | 0.65 | 0.83 | 0.98 | 146 | 254 | 494 | 2.67 | 6.65 | 9.31 | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB10BB | 0.13 | 0.40 | 1.03 | 0.08 | 0.24 | 0.70 | 0.41 | 0.67 | 0.93 | 0.55 | 0.78 | 0.96 | 146 | 254 | 494 | 2.52 | 6.24 | 9.02 | 1.00 | 1.00 | 1.00 | 0.89 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB21AA | 0.44 | 0.52 | 0.53 | 0.30 | 0.49 | 0.56 | 0.86 | 0.96 | 0.98 | 0.92 | 0.98 | 0.99 | 136 | 250 | 473 | 1.01 | 7.93 | 15.94 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB21BA | 0.01 | 0.09 | 0.34 | 0.01 | 0.06 | 0.25 | 0.12 | 0.41 | 0.69 | 0.25 | 0.57 | 0.81 | 49 | 273 | 483 | 0.49 | 1.50 | 2.55 | 1.00 | 1.00 | 1.00 | 0.63 | 1.00 | 1.00 | 0.00 | 0.00 | 0.17 |
| GB22AA | 0.28 | 0.61 | 0.83 | 0.16 | 0.41 | 0.63 | 0.59 | 0.86 | 0.94 | 0.75 | 0.93 | 0.97 | 136 | 250 | 493 | 1.60 | 8.78 | 15.24 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB22BA | 0.00 | 0.01 | 0.05 | 0.00 | 0.00 | 0.04 | 0.00 | 0.14 | 0.44 | 0.00 | 0.27 | 0.61 | 0 | 18 | 262 | 0.00 | 0.12 | 0.51 | 1.00 | 1.00 | 1.00 | 0.45 | 0.86 | 1.00 | 0.00 | 0.07 | 0.19 |
| GB23AA | 0.62 | 0.88 | 0.96 | 0.35 | 0.67 | 0.87 | 0.75 | 0.93 | 0.97 | 0.86 | 0.96 | 0.99 | 136 | 250 | 493 | 1.86 | 13.08 | 22.48 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.02 |
| GB23BA | 0.02 | 0.10 | 0.45 | 0.01 | 0.06 | 0.30 | 0.14 | 0.39 | 0.67 | 0.27 | 0.56 | 0.79 | 70 | 277 | 483 | 0.60 | 1.54 | 2.59 | 0.82 | 1.00 | 1.00 | 0.57 | 1.00 | 1.00 | 0.00 | 0.00 | 0.14 |
| GB24AA | 0.50 | 0.87 | 0.96 | 0.29 | 0.66 | 0.85 | 0.70 | 0.92 | 0.97 | 0.83 | 0.96 | 0.99 | 165 | 274 | 523 | 2.49 | 11.08 | 19.13 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.03 |
| GB24BA | 0.92 | 0.97 | 0.99 | 0.72 | 0.88 | 0.94 | 0.94 | 0.98 | 0.99 | 0.97 | 0.99 | 1.00 | 167 | 292 | 486 | 2.83 | 13.59 | 29.18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| GB25AA | 0.47 | 0.89 | 1.05 | 0.27 | 0.61 | 0.92 | 0.71 | 0.91 | 0.99 | 0.84 | 0.95 | 1.00 | 154 | 269 | 487 | 2.72 | 12.62 | 20.79 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.04 |
| GB25BA | 0.07 | 0.19 | 0.46 | 0.04 | 0.12 | 0.32 | 0.20 | 0.54 | 0.75 | 0.33 | 0.70 | 0.86 | 107 | 274 | 477 | 1.02 | 3.03 | 4.30 | 1.00 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.00 | 0.00 | 0.07 |