

APPENDIX SUMMARY OF PARAMETERS FOR VORTEX RUNS

The Excel spreadsheet from which these parameter values were extracted is provided on the report CD with file name “Ara PVA ver2.xls”

SCENARIOS			
Parameter	Baseline	Stable	Uniform
# Iterations	500		
# Years	100		
Definition of Extinction	Only one sex remains		
# Populations	1		
Inbreeding Depression	No		
EV Concordance between Reproduction and Survival	No		
EV Correlation among Populations	N/A		
# Catastrophes	6		
Labels and State Variables	N/A		
Dispersal	N/A		
Reproductive System	Longterm Monogamy		
Age at 1st Breeding (females)	6		
Age at 1st Breeding (males)	6		
Maximum Age of Reproduction	25		
Maximum # Progeny	3		
Sex Ratio	50		
Density-dependent Reproduction	No		
% Adult females breeding	30		
EV % Adult females breeding	16		
% Broods with 1 chick	76		
% Broods with 2 chicks	23		
% Broods with 3 chicks	1		
Mortality Age 0-1 (m/f)	35		
EV Mortality Age 0-1 (m/f)	5		
Mortality Age 1-2 (m/f)	10		
EV Mortality Age 1-2 (m/f)	3		
Mortality Age 2-3 (m/f)	10		
EV Mortality Age 2-3 (m/f)	3		
Mortality Age 3-4 (m/f)	5		
EV Mortality Age 3-4 (m/f)	2		
Mortality Age 4-5 (m/f)	5		
EV Mortality Age 4-5 (m/f)	2		
Mortality Age 5-6 (m/f)	5		
EV Mortality Age 5-6 (m/f)	2		
Adult Mortality (m/f)	5		
EV Adult Mortality (m/f)	2		
Catastrophe 1 Frequency	0		
Catastrophe 1 Severity (reproduction)	0.9		
Catastrophe 1 Severity (survival)	1		
Catastrophe 2 Frequency	0		
Catastrophe 2 Severity (reproduction)	0.75		
Catastrophe 2 Severity (survival)	0.9		
Catastrophe 3 Frequency	0		
Catastrophe 3 Severity (reproduction)	0.9		
Catastrophe 3 Severity (survival)	1		
Catastrophe 4 Frequency	1		
Catastrophe 4 Severity (reproduction)	0.1		
Catastrophe 4 Severity (survival)	0.25		
Catastrophe 5 Frequency	0		

Catastrophe 5 Severity (reproduction)		0.9		
Catastrophe 5 Severity (survival)		0.9		
Catastrophe 6 Frequency		0		
Catastrophe 6 Severity (reproduction)		0.9		
Catastrophe 6 Severity (survival)		0.9		
All males breeding	Yes			
Initial Population Size		354		
Stable Age Distribution	No		Yes	
Carrying Capacity		1200		
EV of Carrying Capacity		120		
Trend in Carrying Capacity	No			
Harvesting	No			
Supplementation	No			
Genetic Management	No			

254/100	154/100/100
800/400	600/200/400
80/40	60/20/40

Age	AGE DISTRIBUTIONS			Initial Pop 254	Initial Pop 554	Max Repro 20	Max Repro 30	Two Populations: Guat/Mex	Two/Three Populations: Belize
	Baseline	Stable	Uniform						
1	4	20	8	2	8	4	4	2	2
2	4	17	8	2	8	4	4	2	2
3	4	14	7	2	8	4	4	2	2
4	4	12	7	2	8	4	4	2	2
5	4	11	7	2	8	4	4	2	2
6	4	10	7	2	8	4	4	2	2
7	4	10	7	2	8	4	4	2	2
8	4	8	7	2	8	4	4	2	2
9	4	9	7	2	8	4	4	2	2
10	4	7	7	2	8	4	4	2	2
11	4	7	7	2	8	4	4	2	2
12	4	6	7	2	8	4	4	2	2
13	4	5	7	2	8	4	4	2	2
14	4	5	7	2	8	4	4	2	2
15	4	5	7	2	8	4	4	2	2
16	4	4	7	2	8	33	4	2	2
17	4	3	7	2	8	28	4	2	2
18	4	4	7	2	8	23	4	2	2
19	4	3	7	2	8	20	4	2	2
20	4	3	7	2	8	13	4	2	2
21	29	2	7	27	33		4	27	2
22	24	2	7	22	27		4	22	2
23	19	2	7	17	23		4	17	2
24	16	2	7	14	20		4	14	2
25	9	2	7	7	13		4	7	2
26							25		
27							20		
28							15		
29							12		
30							5		

SUPPLEMENTATION

	Supplement 6	Supplement 12	Supplement 18
1st year of supplementation	0		
last year of supplementation	10		
interval	1		
number of males	3	6	9
number of females	3	6	9
age of individuals	2		

DISPERSAL					
Scenario	Annual Exchange (M/G and B)	Annual Exchange (M/G)	Annual Exchange (G/B)	Annual Exchange (B/M)	Success (M/G)
Two Populations 0%	0				31
Two Populations 0.04%	0.04				31
Two Populations 0.4%	0.4				31
Two Populations 4%	4				31
Two Populations Source	0.04				31
Three Populations 0%: Mexico		0	0	0	
Three Populations 0.04%: Mexico		0.04	0.04	0.04	
Three Populations 0.4%: Mexico		0.4	0.4	0.4	
Three Populations 4%: Mexico		4	4	4	
Three Populations 0%: Mexico Asym		0.4	0	0	
Three Populations 0.04%: Mexico Asym		0.4	0.04	0.04	
Three Populations 0.4%: Mexico Asym		0.4	0.4	0.4	
Three Populations 4%: Mexico Asym		4	0.04	0.04	

GROWTH AND EXTINCTION RATES

Scenario	Deterministic r	Stochastic r	SD (stoch r)	Final N
Baseline	-0.002	-0.016	0.16	204
Uniform	-0.002	-0.13	0.162	248
Stable	-0.002	-0.01	0.152	293
Initial Population 554	-0.002	-0.14	0.16	310
Initial Population 254	-0.002	-0.02	0.167	113
Two Populations 0%: M&G	0	-0.016	0.162	20
Two Populations 0%: Belize	-0.013	-0.027	0.161	297
Two Populations 0%: Meta		-0.019	0.157	167
Two Populations 0.04%: M&G	0	-0.018	0.168	129
Two Populations 0.04%: Belize	-0.013	-0.026	0.169	20
Two Populations 0.04%: Meta		-0.02	0.162	150
Two Populations 0.4%: M&G	0	-0.02	0.162	105
Two Populations 0.4%: Belize	-0.013	-0.019	0.164	36
Two Populations 0.4%: Meta		-0.021	0.161	141
Two Populations 4%: M&G	0	-0.023	0.167	72
Two Populations 4%: Belize	-0.013	-0.014	0.169	62
Two Populations 4%: Meta		-0.021	0.156	133
Two Populations Source: M&G	0	-0.016	0.164	138
Two Populations Source: Belize	0.017	0.006	0.157	198
Two Populations Source: Meta		-0.005	0.157	336
Three Populations 0%: Mexico	-0.013	-0.033	0.168	11
Three Populations 0%: Belize	-0.013	-0.027	0.161	19
Three Populations 0%: Guat	0.19	0.004	0.163	297
Three Populations 0%: Meta		-0.005	0.158	327
Three Populations 0.04%: Mexico	-0.013	-0.027	0.166	17
Three Populations 0.04%: Belize	-0.013	-0.024	0.165	24
Three Populations 0.04%: Guat	0.019	0.003	0.164	287
Three Populations 0.04%: Meta		-0.006	0.157	328
Three Populations 0.4%: Mexico	-0.013	-0.015	0.168	52
Three Populations 0.4%: Belize	-0.013	-0.015	0.163	54
Three Populations 0.4%: Guat	0.019	-0.002	0.163	240
Three Populations 0.4%: Meta		-0.008	0.154	346
Three Populations 4%: Mexico	-0.013	-0.014	0.182	56
Three Populations 4%: Belize	-0.013	-0.014	0.181	58
Three Populations 4%: Guat	0.019	-0.017	0.179	74
Three Populations 4%: Meta		-0.017	0.159	189
Three Populations 0%: Mexico Asym	-0.013	-0.014	0.171	51
Three Populations 0%: Belize Asym	-0.013	-0.027	0.165	21
Three Populations 0%: Guat Asym	0.019	0.001	0.162	258
Three Populations 0%: Meta Asym		-0.007	0.155	330
Three Populations 0.04%: Mexico Asym	-0.013	-0.014	0.166	52
Three Populations 0.04%: Belize Asym	-0.013	-0.023	0.159	25
Three Populations 0.04%: Guat Asym	0.019	0.001	0.16	262
Three Populations 0.04%: Meta Asym		-0.006	0.152	339
Three Populations 0.4%: Mexico Asym	-0.013	-0.016	0.176	45
Three Populations 0.4%: Belize Asym	-0.013	-0.016	0.168	49
Three Populations 0.4%: Guat Asym	0.019	-0.004	0.169	223
Three Populations 0.4%: Meta Asym		-0.01	0.161	318
Three Populations 4%: Mexico Asym	-0.013	-0.008	0.176	75

Three Populations 4%: Belize Asym	-0.013	-0.025	0.166	21
Three Populations 4%: Guat Asym	0.019	-0.012	0.175	128
Three Populations 4%: Meta Asym		-0.014	0.161	224
Chlamydia	0.005	-0.001	0.062	366
All Diseases	0.003	-0.005	0.1	309
AFB 5	0.005	-0.1	0.16	315
AFB 7	-0.008	-0.022	0.159	111
Max Repro 20	-0.016	-0.32	0.162	39
Max Repro 30	0.005	-0.007	0.155	382
Breeding Success 65%	0.058	0.047	0.159	991
Breeding Success 39%	0.017	0.005	0.157	627
Breeding Success 26%	-0.013	-0.026	0.159	65
Breeding Success 13%	-0.06	-0.074	0.17	0.3
Supplement 6	-0.002	-0.013	0.16	237
Supplement 12	-0.002	-0.011	0.157	279
Supplement 18	-0.002	-0.008	0.156	329
Supplement 18 Disease	-0.01	-0.24	0.212	146

SD (Final N)	P (extinction)
242	0.122
283	0.108
304	0.06
321	0.056
145	0.22
32	0.16
125	0.464
201	0.148
166	0.174
32	0.424
188	0.152
135	0.186
49	0.306
178	0.168
87	0.21
75	0.232
161	0.182
164	0.144
145	0.086
287	0.072
20	0.552
32	0.434
223	0.086
252	0.086
26	0.394
36	0.37
221	0.092
261	0.09
55	0.22
61	0.198
212	0.116
317	0.108
61	0.202
67	0.218
87	0.21
213	0.168
53	0.208
37	0.44
214	0.09
285	0.086
54	0.19
34	0.354
216	0.072
289	0.068
51	0.234
59	0.248
211	0.118
311	0.108
74	0.176

34	0.426
142	0.16
237	0.136
210	0
225	0.014
334	0.09
140	0.18
54	0.288
370	0.046
306	0
417	0.022
83	0.19
1.4	0.95
269	0.08
294	0.058
324	0.064
249	0.228