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Appendix I

Argyrosomus japonicus samples analysed in the present study. Samples are listed by locality, and haplotype nr, date collected and fish size are shown.

Southern Cape

Sample number	<i>h</i> nr	Date collected	Size TL (mm)
Aj0172DeH	3	23/11/00	702
Aj0173DeH	19	23/11/00	752
Aj0174DeH	16	23/11/00	940
Aj0293KAl	5	22/02/01	795
Aj0294KAl	13	22/02/01	696
Aj0295KAl	26	22/02/01	744
Aj0296KAl	3	22/02/01	798
Aj0297KAl	26	22/02/01	705
Aj0298KAl	3	22/02/01	645
Aj0299KAl	12	24/02/01	654
Aj0301KAl	23	22/02/01	695
Aj0492DeH	23	12/07/01	788
Aj0493DeH	26	12/07/01	745
Aj0494DeH	16	12/07/01	585
Aj0495DeH	19	12/07/01	558
Aj0496DeH	16	12/07/01	475
Aj0497DeH	32	14/07/01	800
Aj0498DeH	16	24/08/01	553
Aj0499DeH	3	24/08/01	460
Aj0500DeH	5	24/08/01	562
Aj0501DeH	19	24/08/01	570
Aj0502DeH	11	25/08/01	775
Aj0503DeH	8	25/08/01	492
Aj0504DeH	35	24/08/01	760
Aj0538KAl	1	01/11/01	540
Aj0539DeH	32	01/11/01	690
Aj0540DeH	5	01/11/01	850
Aj0542DeH	26	01/11/01	512
Aj0543DeH	11	01/11/01	470
Aj0544DeH	8	01/11/01	483
Aj0545DeH	8	01/11/01	482
Aj0550DeH	26	01/11/01	518
Aj0551DeH	11	01/11/01	790

Eastern Cape

Sample number	<i>h</i> nr	Date collected	Size TL (mm)
Aj0303Fis	7	14/04/01	400
Aj0304Fis	6	14/04/01	272
Aj0305Fis	34	14/04/01	350
Aj0306Fis	1	14/04/01	720
Aj0307Fis	25	14/04/01	240
Aj0308Fis	35	14/04/01	370
Aj0309Fis	28	14/04/01	280
Aj0310Fis	11	14/04/01	320
Aj0311Fis	11	14/04/01	290
Aj0312Fis	32	14/04/01	650
Aj0313Fis	32	14/04/01	300
Aj0314Fis	27	14/04/01	260
Aj0315Fis	17	14/04/01	450
Aj0316Fis	18	14/04/01	430
Aj0317Fis	26	14/04/01	450
Aj0318Fis	16	14/04/01	510
Aj0319Fis	8	14/04/01	460
Aj0320Fis	16	14/04/01	730
Aj0321Fis	14	14/04/01	570
Aj0322Fis	28	14/04/01	450
Aj0323Fis	10	14/04/01	970
Aj0324Fis	26	14/04/01	430
Aj0325Fis	35	14/04/01	290
Aj0326Fis	11	14/04/01	420
Aj0327Fis	16	14/04/01	460
Aj0328Fis	1	14/04/01	500
Aj0329Fis	34	14/04/01	480
Aj0330Fis	33	14/04/01	460
Aj0331Fis	33	14/04/01	480
Aj0332Fis	9	14/04/01	320
Aj0333Fis	30	14/04/01	290
Aj1125Fis	24	20/09/01	430
Aj1126Fis	3	20/09/01	500
Aj1127Fis	8	20/09/01	260
Aj1128Fis	8	20/09/01	400
Aj1129Fis	11	20/09/01	600
Aj1130Fis	8	10/10/01	330
Aj1131Fis	9	10/10/01	250
Aj1132Fis	15	10/10/01	320
Aj1133Fis	20	10/10/01	350
Aj1134Fis	30	10/10/01	800
Aj1137Fis	31	10/10/01	400
Aj1138Fis	8	20/10/01	440
Aj1139Fis	5	20/10/01	410
Aj1140Fis	3	20/10/01	550
Aj1141Fis	23	14/11/01	300
Aj1142Fis	11	14/11/01	280
Aj1144Fis	32	14/11/01	350



Wild Coast

Sample number	<i>h</i> nr	Date collected	Size TL (mm)
Aj0017Mng	32	23/01/01	juv
Aj0020Mng	5	24/01/01	juv
Aj0021Mng	1	24/01/01	juv
Aj0022Mng	11	24/01/01	juv
Aj0023Mng	8	24/01/01	juv
Aj0024Mng	3	24/01/01	juv
Aj0046Mng	7	24/01/01	juv
Aj0047Mng	5	24/01/01	juv
Aj0048Mng	12	24/01/01	juv
Aj0051Mng	11	24/01/01	juv
Aj0054Mng	3	24/01/01	juv
Aj0055Mng	32	24/01/01	juv
Aj0073Mng	35	25/01/01	juv
Aj0074Mng	3	25/01/01	juv
Aj0079Mng	5	25/01/01	juv
Aj0103Mng	11	26/01/01	juv
Aj0104Mng	11	26/01/01	juv
Aj0105Mng	23	26/01/01	juv
Aj0106Mng	26	26/01/01	juv
Aj0160Mna	25	29/01/01	juv
Aj0162Mna	26	29/01/01	juv
Aj0163Mna	32	29/01/01	juv
Aj0389Mna	11	07/06/01	244
Aj0411Mna	26	07/06/01	380
Aj0425Mna	34	08/06/01	145
Aj0452Mng	21	10/06/01	46
Aj0469Mng	7	11/06/01	470
Aj0475Mng	26	11/06/01	405
Aj0477Mng	19	11/06/01	310
Aj1153Mng	12	23/01/02	280

KwaZulu-Natal

Sample number	<i>h</i> nr	Date collected	Size TL (mm)
Aj0619StL	19	15/07/02	
Aj0620StL	1	23/08/02	345
Aj1038StL	5	1/05/03	juv
Aj1039StL	26	1/05/03	juv
Aj1040StL	26	1/05/03	juv
Aj1041StL	8	1/05/03	juv
Aj1042StL	5	1/05/03	950
Aj1043StL	7	1/05/03	juv
Aj1044StL	3	1/05/03	juv
Aj1045StL	7	1/05/03	juv
Aj1046StL	3	1/05/03	juv
Aj1047StL	12	1/05/03	820
Aj1048StL	11	1/05/03	102
Aj1049StL	8	1/05/03	800
Aj1050StL	30	1/05/03	107
Aj1051StL	29	1/05/03	850
Aj1052StL	2	1/05/03	100
Aj1054StL	4	1/05/03	juv
Aj2550StL	22	11/08/03	850
Aj2551StL	26	11/08/03	870
Aj2552StL	9	11/08/03	870
Aj2553StL	22	11/08/03	730

Appendix II Absolute pairwise differences between *Argyrosomus japonicus* control region haplotypes from four regions along the South African coast.

h nr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35				
1	0																																						
2	1	0																																					
3	1	2	0																																				
4	2	3	1	0																																			
5	2	3	1	2	0																																		
6	3	4	2	3	1	0																																	
7	1	2	2	3	3	4	0																																
8	2	3	3	4	4	5	1	0																															
9	3	4	4	5	5	6	2	1	0																														
10	4	5	5	6	6	7	3	2	1	0																													
11	3	4	4	5	5	6	4	5	6	7	8	0																											
12	4	5	5	6	6	7	5	6	7	8	1	0																											
13	4	5	5	6	6	7	5	6	7	8	1	2	0																										
14	4	5	5	6	6	7	5	6	7	8	1	2	2	0																									
15	4	5	5	6	6	7	5	6	7	8	1	2	2	2	0																								
16	4	5	5	6	6	7	5	6	7	8	3	4	4	4	4	0																							
17	5	6	6	7	7	8	6	7	8	9	4	5	5	5	5	2	0																						
18	6	7	7	8	8	9	7	8	9	10	5	6	6	6	6	2	4	0																					
19	8	9	9	10	10	11	9	10	11	12	7	8	8	8	8	4	4	6	0																				
20	5	6	6	7	7	8	6	7	8	9	4	5	5	5	5	5	6	7	9	0																			
21	6	7	7	8	8	9	7	8	9	10	7	8	8	8	8	8	9	10	12	9	0																		
22	6	7	7	8	8	9	7	8	9	10	7	8	8	8	8	8	9	10	12	9	2	0																	
23	6	6	7	8	8	9	7	8	9	10	5	6	6	6	6	6	7	8	10	7	10	10	0																
24	8	8	9	10	10	11	9	10	11	12	7	8	8	8	8	8	9	10	12	9	12	12	2	0															
25	8	8	9	10	10	11	9	10	10	11	7	8	8	8	8	8	9	10	12	9	12	12	4	6	0														
26	6	6	7	8	8	9	7	8	9	10	5	6	6	6	6	6	7	8	10	7	10	10	4	6	6	0													
27	7	7	8	9	9	10	8	9	10	11	6	7	7	7	7	7	8	9	11	8	11	11	5	7	7	1	0												
28	7	7	8	9	9	10	8	9	10	11	6	7	7	7	7	7	8	9	11	8	11	11	5	7	7	1	2	0											
29	8	8	9	10	10	11	9	10	11	12	7	8	8	8	8	8	9	10	12	9	12	12	6	8	8	2	3	3	0										
30	7	7	8	9	9	10	8	9	10	11	6	7	7	7	7	7	8	9	11	8	11	11	5	7	7	3	4	4	5	0									
31	9	9	10	11	11	12	10	11	12	13	8	9	9	9	9	9	10	11	13	10	13	11	5	7	9	5	6	6	7	6	0								
32	8	8	9	10	10	11	9	10	11	12	7	8	8	8	8	8	9	10	12	9	12	12	6	8	8	6	7	7	8	7	9	0							
33	9	9	10	11	11	12	10	11	12	13	8	9	9	9	9	9	10	11	13	10	13	13	7	9	9	7	8	8	9	8	10	1	0						
34	9	9	10	11	11	12	10	11	12	13	8	9	9	9	9	9	10	11	13	10	13	13	7	9	9	7	8	8	9	8	10	1	2	0					
35	10	10	11	12	12	13	11	12	13	14	9	10	10	10	10	10	11	12	14	11	14	14	8	10	10	8	9	9	10	9	11	2	3	3	0				

Appendix III

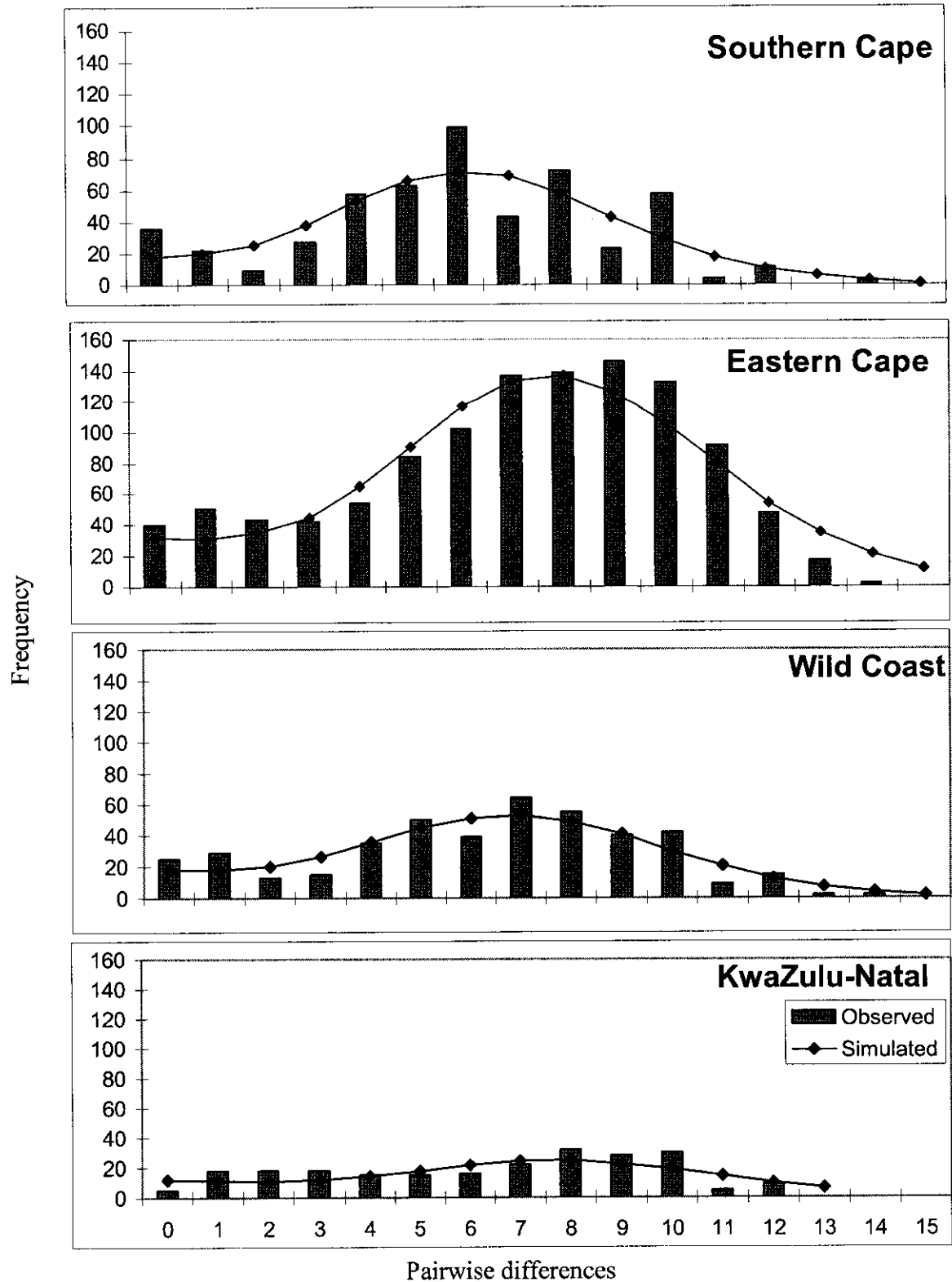


Fig. III.1 Mismatch distributions of *A. japonicus* at the four South African localities.

Table III.1 Mismatch distribution results from four populations of *A. japonicus*. Parameters of the model of sudden expansion are presented as well as goodness-of-fit to the model. Harpending's index of raggedness and its *P* value are given (Harpending, 1994; Rogers, Harpending, 1992).

	Southern Cape	Eastern Cape	Wild Coast	KwaZulu-Natal	<i>SOUTH AFRICA</i>
Parameters					
θ_0	0.003	0.000	0.000	0.000	0.003
θ_1	28.690	35.336	21.448	23.452	18.814
τ	6.912	8.624	8.542	7.738	8.770
Test of Goodness-of-fit					
<i>S.S.D.</i>	0.014	0.002	0.003	0.005	0.010
<i>P</i>	0.149	0.691	0.867	0.648	0.548
Raggedness index	0.049	0.006	0.011	0.017	0.020
<i>P</i>	0.046	0.924	0.833	0.565	0.718

n = number of haplotypes involved in the computations, θ_0 = pre-expansion, θ_1 = post-expansion, τ = time in generations since expansion.

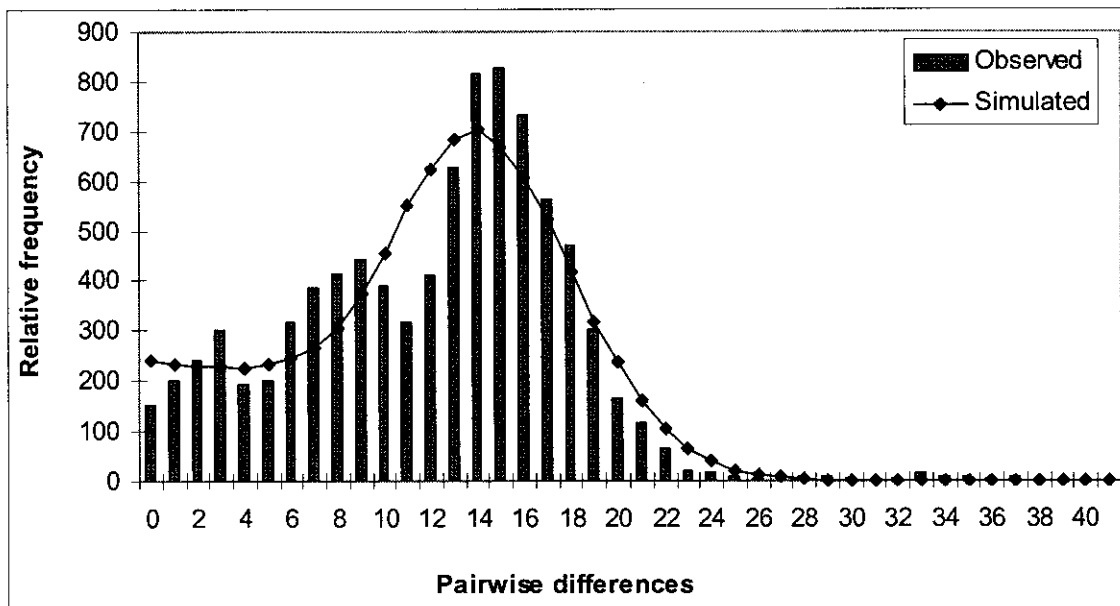


Fig III.2 Mismatch distribution based on the complete mtDNA control region (819bp) between 133 *A. japonicus* individuals. The expected frequency is based on a population growth-decline model (*S.S.D.* = 0.003 *P* = 0.667, $r = 0.003$ *P* = 0.907, $\theta_0 = 0.003$ and $\theta_1 = 35.285$, $\tau = 15.131$) determined using ARLEQUIN 2.0.



Appendix IV

Pomadasys commersonnii samples analysed in the present study. Samples are listed by locality, and haplotype nr, date collected and fish size are shown.

Southern Cape

Sample number	<i>h</i> nr	Date collected	Size TL (mm)
Pc2198Grt	17	16/09/02	542
Pc2199Grt	41	16/09/02	245
Pc2200Grt	10	16/09/02	553
Pc2201Grt	13	16/09/02	575
Pc2202Grt	61	16/09/02	685
Pc2203Grt	41	16/09/02	552
Pc2204Grt	73	16/09/02	555
Pc2205Grt	34	16/09/02	571
Pc2206Grt	1	16/09/02	538
Pc2215Brd	54	19/09/02	598
Pc2216Brd	43	20/09/02	555
Pc2226Brd	50	20/09/02	609
Pc2227Brd	24	20/09/02	588
Pc2228Brd	45	20/09/02	542
Pc2229Brd	48	20/09/02	602
Pc2230Brd	46	20/09/02	665
Pc2231Brd	3	20/09/02	620
Pc2232Brd	1	20/09/02	440
Pc2233Brd	31	20/09/02	655
Pc2275Hnn	18	05/10/02	534
Pc2276Hnn	41	05/10/02	500
Pc2277Hnn	19	30/10/02	620
Pc2278Hnn	26	05/10/02	522
Pc2279Hnn	24	18/11/02	675
Pc2280Hnn	58	20/11/02	485
Pc2281Hnn	44	28/10/02	520
Pc2282Hnn	7	18/11/02	635
Pc2283Hnn	48	26/10/02	655
Pc2284Hnn	21	19/10/02	503
Pc2285Hnn	67	26/10/02	500
Pc2286Hnn	74	20/10/02	500

Eastern Cape

Sample number	<i>h</i> nr	Date collecte	Size TL (mm)
Pc0247EKM	9	8/02/01	420 SL
Pc0248EKM	74	8/02/01	291 SL
Pc0249EKM	24	8/02/01	229 SL
Pc0250EKM	57	8/02/01	275 SL
Pc0251EKM	39	8/02/01	295 SL
Pc0334Fis	51	14/04/01	360
Pc0335Fis	25	14/04/01	450
Pc0338Fis	9	14/04/01	430
Pc0339Fis	36	14/04/01	500
Pc0341Fis	63	14/04/01	740
Pc0342Fis	22	14/04/01	310
Pc0343Fis	46	14/04/01	470
Pc0344Fis	10	14/04/01	530
Pc0345Fis	39	14/04/01	400
Pc0346Fis	63	14/04/01	420
Pc0348Fis	6	14/04/01	640
Pc0349Fis	34	14/04/01	400
Pc0350Fis	40	14/04/01	260
Pc0351Fis	72	14/04/01	390
Pc0352Fis	17	14/04/01	211
Pc0353Fis	35	14/04/01	530
Pc0354Fis	24	14/04/01	510
Pc0356Fis	39	14/04/01	320
Pc0358Fis	8	14/04/01	341
Pc0360Fis	63	14/04/01	390
Pc0361Fis	38	14/04/01	340
Pc0362Fis	71	14/04/01	480
Pc0365Fis	28	14/04/01	196
Pc0366Fis	50	14/04/01	222
Pc0367Fis	33	14/04/01	215
Pc0368Fis	15	14/04/01	300
Pc0369Fis	56	14/04/01	680
Pc0385Kow	9	01/05/01	205 SL
Pc0386Kow	35	01/05/01	152 SL



Wild Coast

Sample number	<i>h</i> nr	Date collecte	Size TL (mm)
Pc0008Mng	34	23/01/01	juv
Pc0014Mng	24	23/01/01	juv
Pc0015Mng	60	23/01/01	juv
Pc0016Mng	51	23/01/01	juv
Pc0018Mng	3	24/01/01	juv
Pc0019Mng	35	24/01/01	juv
Pc0028Mng	1	24/01/01	juv
Pc0029Mng	63	24/01/01	juv
Pc0030Mng	53	24/01/01	juv
Pc0042Mng	46	24/01/01	juv
Pc0043Mng	63	24/01/01	juv
Pc0044Mng	24	24/01/01	juv
Pc0045Mng	2	24/01/01	juv
Pc0050Mng	8	24/01/01	juv
Pc0052Mng	34	24/01/01	juv
Pc0053Mng	35	24/01/01	juv
Pc0056Mng	8	25/01/01	juv
Pc0062Mng	70	25/01/01	juv
Pc0063Mng	39	25/01/01	juv
Pc0064Mng	24	25/01/01	juv
Pc0065Mng	24	25/01/01	juv
Pc0066Mng	39	25/01/01	juv
Pc0067Mng	52	25/01/01	juv
Pc0068Mng	65	25/01/01	juv
Pc0071Mng	32	25/01/01	sub adult
Pc0072Mng	63	25/01/01	juv
Pc0075Mng	11	25/01/01	juv
Pc0076Mng	59	25/01/01	juv
Pc0077Mng	24	25/01/01	juv
Pc0078Mng	68	25/01/01	juv
Pc0102Mng	14	25/01/01	juv
Pc0123Mng	5	26/01/01	juv
Pc0124Mng	64	26/01/01	juv
Pc0125Mng	20	26/01/01	juv
Pc0158Mna	23	28/01/01	juv
Pc0161Mna	36	29/01/01	juv
Pc0165Mna	39	29/01/01	juv
Pc0410Mna	48	07/06/01	450
Pc0414Mna	24	08/06/01	382
Pc0416Mna	9	08/06/01	403
Pc0426Mna	36	08/06/01	79
Pc0437Mng	39	10/06/01	234
Pc0470Mng	36	11/06/01	387
Pc1152Mng	12	23/01/02	159

KwaZulu-Natal

Sample number	<i>h</i> nr	Date collecte	Size TL (mm)
Pc0482StL	4	01/06/01	310
Pc0483StL	1	12/06/01	420
Pc0484StL	47	12/06/01	540
Pc0485StL	30	12/06/01	500
Pc0486StL	69	12/06/01	510
Pc0487StL	37	12/06/01	550
Pc0488StL	36	12/06/01	565
Pc0489StL	27	12/06/01	540
Pc0591StL	66	21/05/02	402
PC0603StL	26	21/05/02	258
Pc0604StL	1	22/05/02	325
Pc2455StL	1	6/06/03	530
Pc2456StL	1	6/06/03	525
Pc2457StL	9	6/06/03	522
Pc2458StL	49	6/06/03	535
Pc2459StL	36	6/06/03	581
Pc2460StL	62	6/06/03	492
Pc2467StL	10	6/06/03	535
Pc2468StL	9	6/06/03	560
Pc2469StL	68	6/06/03	555
Pc2471StL	19	6/06/03	530
Pc2472StL	29	7/06/03	570
Pc2473StL	55	7/06/03	582
Pc2474StL	10	7/06/03	550
Pc2475StL	24	7/06/03	524
Pc2476StL	1	7/06/03	478
Pc2477StL	34	7/06/03	532
Pc2478StL	62	7/06/03	534
Pc2479StL	16	7/06/03	504
Pc2480StL	42	7/06/03	580



h nr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	0																									
2	1	0																								
3	1	2	0																							
4	3	4	2	0																						
5	1	2	2	4	0																					
6	2	3	3	5	1	0																				
7	1	2	2	4	2	3	0																			
8	2	3	3	5	3	4	1	0																		
9	3	4	4	6	4	5	2	1	0																	
10	4	5	5	7	5	6	3	2	1	0																
11	5	6	6	8	6	7	4	3	2	1	0															
12	5	6	6	8	6	7	4	3	2	1	2	0														
13	5	6	4	6	6	7	4	3	2	1	2	2	0													
14	1	2	2	4	2	3	2	3	4	5	6	6	6	0												
15	2	3	3	5	3	4	3	4	5	6	7	7	7	1	0											
16	6	7	7	9	7	8	7	6	7	8	9	9	9	5	4	0										
17	3	4	4	6	2	3	4	5	6	7	8	8	8	2	3	7	0									
18	3	4	4	6	2	3	4	5	6	7	8	8	8	2	3	7	2	0								
19	4	5	5	7	5	6	5	4	5	6	7	7	7	3	4	6	5	5	0							
20	1	2	2	4	2	3	2	3	4	5	6	6	6	2	3	6	4	4	5	0						
21	3	4	4	6	4	5	4	3	4	5	6	6	6	4	5	6	6	6	5	2	0					
22	5	6	6	8	6	7	6	5	6	7	8	8	8	6	7	8	8	8	7	4	4	0				
23	1	2	2	4	2	3	2	3	4	5	6	6	6	2	3	7	4	4	5	2	4	6	8	4	0	
24	5	6	6	8	6	7	6	5	6	7	8	8	8	6	7	9	8	8	5	6	6	8	4	0		
25	6	7	7	9	7	8	7	6	7	8	9	9	9	7	8	10	9	9	6	7	7	9	5	1	0	
27	6	7	7	9	7	8	7	6	7	8	9	9	9	7	8	10	9	9	6	7	7	9	5	1	2	
28	6	7	7	9	7	8	7	6	7	8	9	9	9	7	8	10	9	9	6	7	7	9	5	1	2	
29	6	7	7	9	7	8	5	4	5	6	7	7	7	7	8	10	9	9	6	7	7	9	5	1	2	
30	6	7	7	9	7	8	7	6	7	8	9	9	9	7	8	10	9	9	6	7	7	9	5	1	2	
31	5	6	6	8	6	7	6	5	6	7	8	8	8	6	7	9	8	8	5	6	6	8	4	2	3	
32	7	8	8	10	8	9	8	7	8	9	10	10	10	8	9	11	10	10	7	8	8	10	6	2	3	
33	2	3	3	5	3	4	3	2	3	4	5	5	5	3	4	6	5	5	4	3	3	5	3	5	6	
34	5	6	6	8	6	7	6	5	6	7	8	8	8	6	5	7	8	8	7	6	6	8	6	6	7	
35	6	7	7	9	7	8	7	6	7	8	9	9	9	7	6	8	9	9	8	7	7	9	7	7	8	
36	7	8	8	10	8	9	8	7	8	9	10	10	10	8	7	8	10	10	9	6	6	8	8	10	11	
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38	3	4	4	6	4	4	4	3	4	5	6	6	6	4	5	7	6	6	5	4	4	6	4	6	7	
39	4	5	5	7	5	5	4	5	6	7	7	7	5	6	8	7	7	6	5	5	5	5	5	7	8	
40	5	6	6	8	6	6	6	5	6	7	8	8	8	6	7	9	8	8	7	6	6	6	6	8	9	
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Appendix V

h nr	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	
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30	2	2	2	0																						
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32	3	3	3	3	4	0																				
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74	10	10	10	10	11	9	10	11	12	14	12	11	12	13	11	13	13	13	13	12	15	14	14	14	13	

Appendix V



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73	19	13	14	14	15	15	15	16	18	9	8	9	8	10	10	10	10	12	4	7	10	0	
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Appendix VI

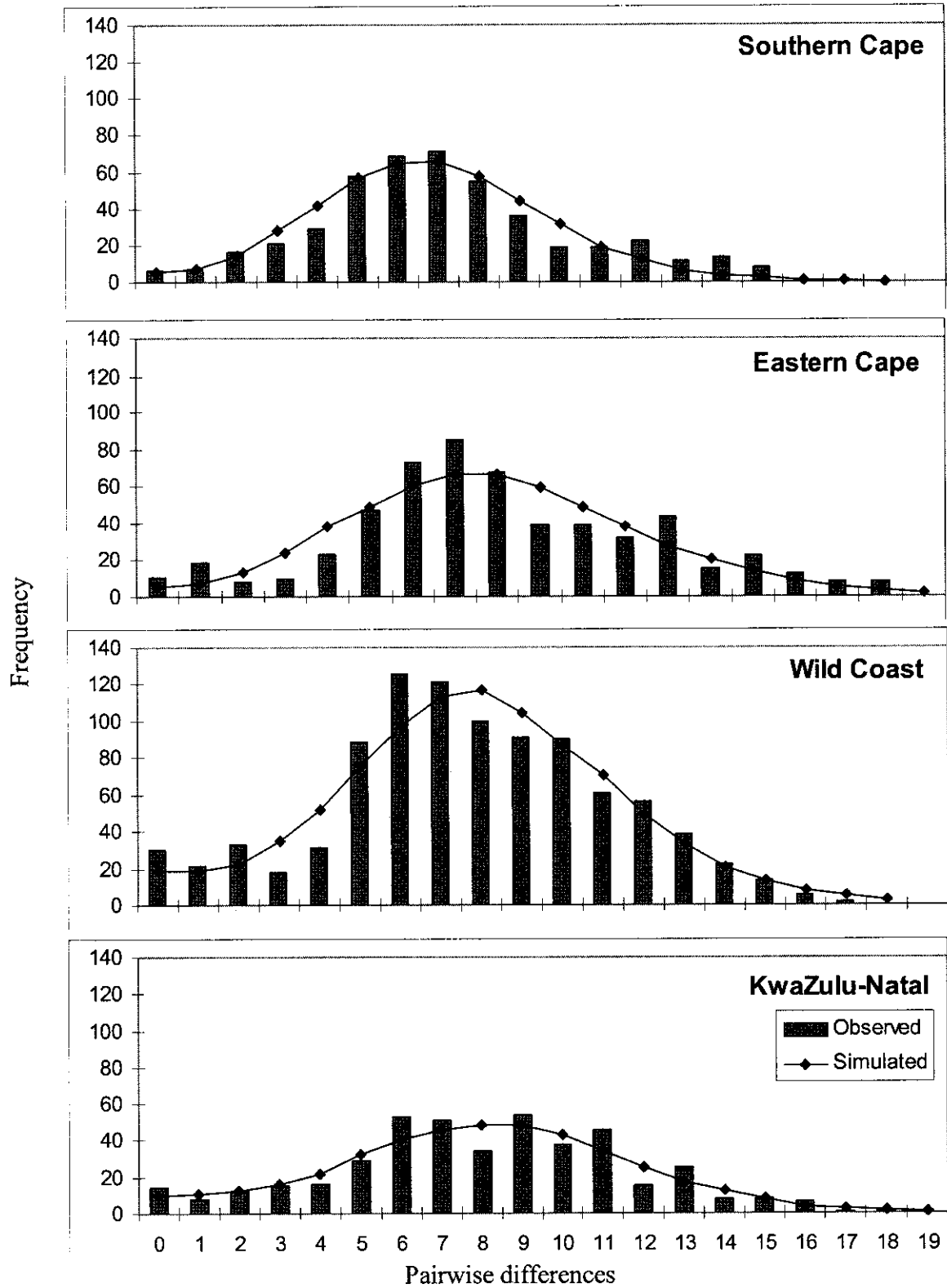


Fig VI.1 Mismatch distributions of *P. commersonnii* control region haplotypes within the four South African localities.



Table VI.1 Mismatch distribution results from four populations of *P. commersonii*. Parameters of the model of sudden expansion are presented as well as goodness of fit to model. Harpending's index of raggedness and its *P* value given (Harpending, 1994; Rogers, Harpending, 1992).

	Southern Cape	Eastern Cape	Wild Coast	KwaZulu-Natal	SOUTH AFRICA
Parameters					
θ_0	1.223	2.068	1.153	1.064	1.481
θ_1	122.5456	106.055	53.990	43.047	55.190
τ	6.041	6.404	7.256	7.872	6.815
Test of Goodness of fit					
<i>S.S.D.</i>	0.004	0.006	0.003	0.005	0.001
<i>P</i>	0.400	0.260	0.550	0.490	0.504
Raggedness index	0.010	0.013	0.008	0.017	0.006
<i>P</i>	0.680	0.320	0.630	0.290	0.685

n = number of haplotypes involved in the computations, θ_0 = pre expansion, θ_1 = post-expansion,
 τ = time in generations since expansion.