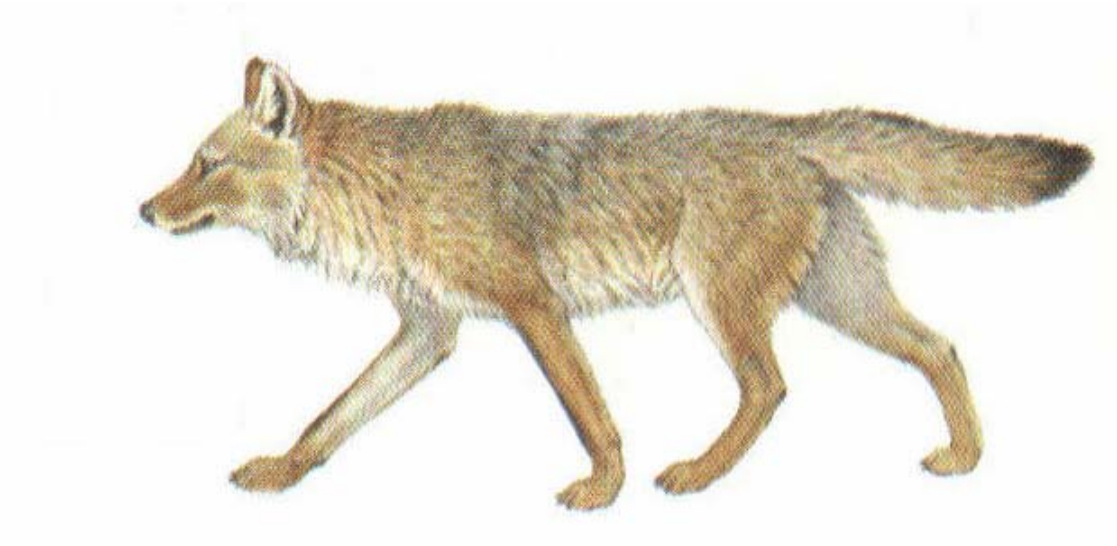
Population Analysis and Breeding/Transfer Plan

Red Wolf

Canis rufus gregoryi

Species Survival Plan®



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PMC

American Zoo and Aquarium Association
Population Management Center

Lincoln Park Zoo

ASSOCIATION OF ZOOS & AQUARIUMS

Executive Summary 2007 – 2008
Breeding/Transfer Plan – Red Wolf SSP®

The captive population of red wolves consists of 208 animals at 39 participating institutions as of July 2007. The population has been growing steadily in captivity since the early 1970s, with a slight decline in numbers in recent years. The target population size set by the SSP and the Canid Taxon Advisory Group is 250.

Current gene diversity for the managed population is 89.52% and is equivalent to the genetic diversity of a population descended from approximately five founders (FGE = 4.77). When gene diversity falls below 90%, it is expected that reproduction will be increasingly compromised by, among other factors, lower birth weights, smaller litter sizes, and greater neonatal mortality. Recent research on red wolves has shown that higher inbreeding levels in males are correlated with reductions in sperm quality. Breeding success and litter size also appear to decrease with increased inbreeding levels of sires and dams. Under the current conditions, with a target size of 200 – 250 and a growth rate of 2%, gene diversity can be maintained at or above 85% for approximately 30 years. Strategies that may help maintain a high level of gene diversity for a longer period of time include increasing the population growth rate and increasing the proportion of breeders in the population (effective population size).

DEMOGRAPHY

Current Population Size (At time of planning meeting)	208	(90.113.5)
Specimens Excluded from Genetic Analyses	36	
Target Population Size	250	
Number of Participating Institutions	39	
Mean Generation Time (years)	5.4	
Population Growth Rate	1.02	
Number of Transfers Within The SSP (Breeding/Space)	10/25	
Number of Specimens to Import/Export	0/0	

GENETICS

	Current	***Potential***
Number of Founders	12	0
Founder Genome Equivalents (fge)	4.77	7.65
Current Gene Diversity (%)	89.52	93.46
Population Mean Kinship	0.1048	--
Mean Inbreeding Coefficient	0.0670	--
Effective Population Size to Census Size Ratio (Ne/N)	0.2420	--
Years To 90% Gene Diversity	already < 90%	--
Gene Diversity at 100 Years From Present (%) *(assuming λ = 1.02, Kt = 200 - 250)*	75.61 – 77.85	--

Demographic projections indicate that approximately 30 – 37 births are needed in the coming year to maintain the population growth rate of 0 - 2% (lambda = 1.00 - 1.02). For the 2007-08 breeding season 17 breeding recommendations have been made in order to meet genetic and demographic goals. Additional pairs could occur prior to next breeding season depending on available space or if breeding recommendations are modified as a result of unanticipated deaths or medical issues. Pairings are based on mean kinship, avoidance of inbreeding, avoidance of linking rare and common lineages, and logistical constraints identified by the participating institutions.

Although inbreeding should be avoided in order to maintain a healthy captive population, it has become increasingly difficult to avoid in this population since no additional founders exist. Higher levels of inbreeding will need to be tolerated in forming reproductive pairs and long term genetic goals will need to be set at lower than 90% gene diversity. The Red Wolf Recovery Plan (USFWS) has set the target gene diversity to be retained at 80 – 85%. For the purposes of this plan, offspring inbreeding coefficients greater than the population mean kinship (0.1048) were avoided.

Summary Actions 2007 - 2008: *The SSP recommends 14 breeding pairs, no imports, no exports, and 35 transfers to create new breeding pairs or meet institutional requests.*

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Acknowledgements

The Red Wolf SSP planning meeting was hosted by the Lincoln Park Zoo in Chicago, Illinois on 26 – 27 July 2007 and was attended by the following:

Will Waddell, Point Defiance Zoo & Aquarium
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Description of Population Status
Red Wolf SSP®

Introduction: Red wolves have been in maintained in captivity since the early 1970's, when the U.S. Fish and Wildlife Service began capturing individuals from the remaining wild population in Texas and Louisiana. At that time, a captive breeding program was established to increase the population size of red wolves and reestablish this federally endangered species in portions of its original range. The captive population has been managed demographically and genetically with the cooperation of approved zoos and nature centers across the country.

The demographic and genetic analyses upon which this report is based were performed in July 2007 using SPARKS v1.52, PopLink 1.07 and PM2000 v1.212 software and data obtained from the International Red Wolf Studbook, current to 20 June 2007. Based on these analyses, draft breeding recommendations were made at the Red Wolf SSP Master Plan Meeting at the Lincoln Park Zoo in Chicago, Illinois on 26 - 27 July 2007.

Analytical Population: As of July 2007, the size of the captive red wolf population in North America was 208 distributed among 39 institutions. This includes captive facilities at three USFWS locations at the Alligator River NWR, NC, Cape Romain NWR, SC, and North Carolina State University. Of these 208 animals, 36 were excluded from the genetic analyses due to sterility, age (primarily females over 10 and males over 12 years old), or health concerns (Appendix B), resulting in a population size of 172 for the analyses. During the comment period, two deaths occurred (557, 1226).

Demography: The Canid, Hyaenid, and Aardwolf TAG have set a target population size for this species at 250. The SSP has decided that with the large number of births this past year, a growth rate of 0% is reasonable for this population to maintain a stable age structure.

The captive population increased steadily from the late 1970's to the mid 1990's, when the population size peaked and began to decline (Figure 1) when births sharply decreased, due primarily to space limitations and the end of participation in the SSP by several cooperators. This resulted in fewer breeding recommendations and breeding prioritization of animals that, based on age, were considered marginal in terms of their reproductive potential. Additionally, space limitations during this time period required implanting reproductive inhibitors In a number of females which may have compromised their reproductive potential when implants were removed to resume expanded reproduction in the population. However, the population has stabilized in the past decade. In the past few years, the population experienced a marked increase in size due in part to a focus on breeding younger animals in addition to the genetically desirable older animals. Despite the large number of births in 2007, a focus on maintaining at least a modest birth rate remains crucial to maintaining the population size, replacing the animals that will be lost due to natural attrition, and providing a reproductive base for the future.

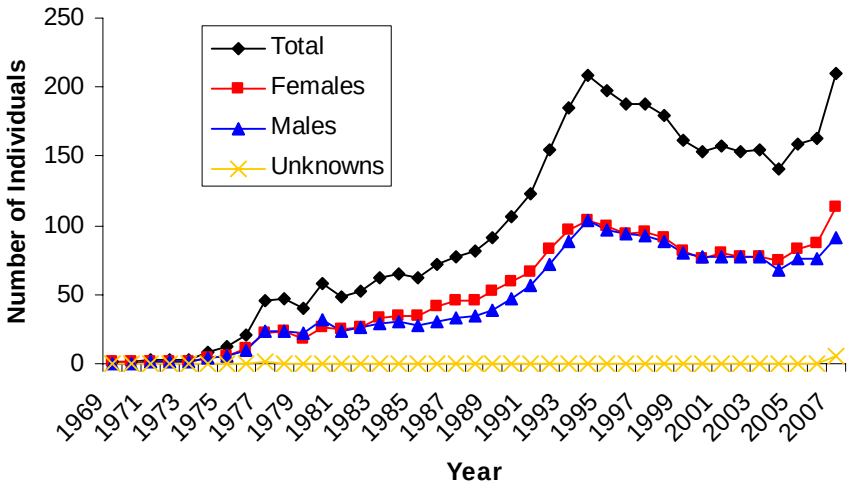

Figure 1. Census of captive red wolf population as of July 2007.

The age structure of this population shows a large proportion of animals in the older age classes in addition to a large base of juveniles from the recent baby boom (Figures 2a and 2b). The number of animals at or approaching reproductive senescence is still a concern for this population. Demographic data indicate that the most reproductive age classes are between 3 and 9 years old. Both males and females are capable of breeding as young as one year old, but female red wolves in this SSP have not demonstrated the ability to reproduce reliably beyond the age of 11, and males not past 15 years (Appendix B). In order to achieve a sufficient number of births to maintain demographic stability, the inclusion of younger animals in breeding pairs should continue. First-year mortality for both sexes has averaged 39% historically (based on studbook data from 1980-2005); however, in recent years average first-year mortality has been 30% (2000-2007 data).

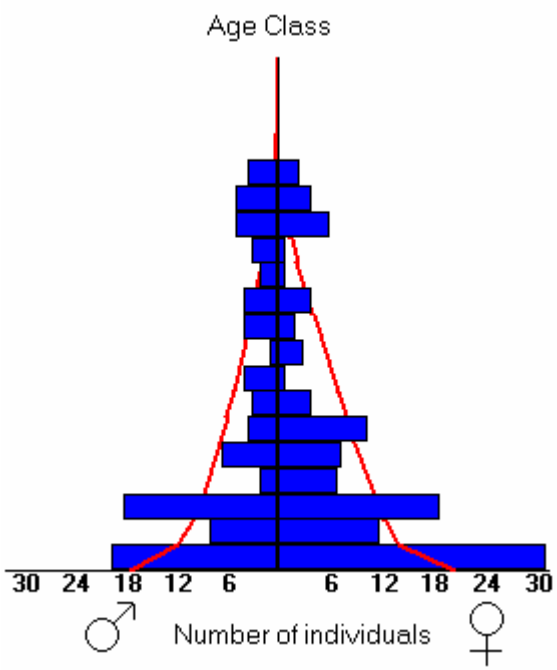

Figure 2a. Age distribution of the entire SSP population of captive red wolves as of July 2007 (no exclusions, N = 208).

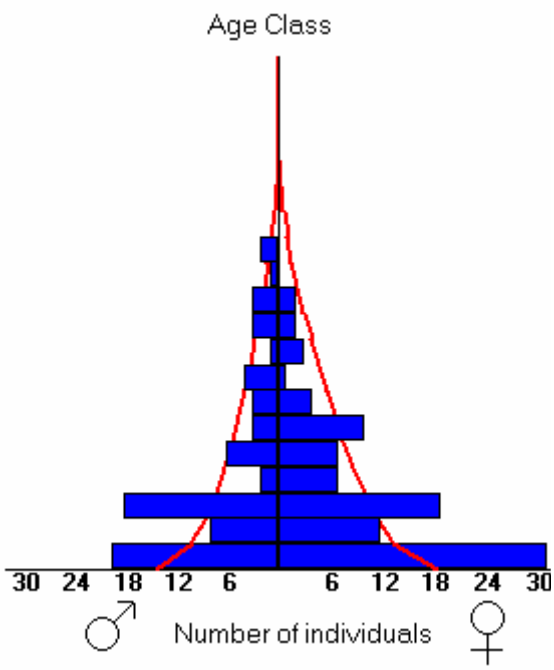

Figure 2b. Age distribution of the potentially breeding population of captive red wolves as of July 2007 (N = 172).

Although the SSP target size is set at 250, there is not sufficient space to grow to this population size; an increase in births in the last few years has limited available space and the number of participating institutions is not likely to increase significantly. Demographic projections indicate that to grow the population at a rate of 2% (lambda = 1.02), approximately 32 – 43 births per year over the next decade will be required. For the next year, the SSP will try to simply offset deaths and maintain the population at its current size, which will require at least 30 births (0% growth rate or lambda = 1.00).

Genetics: Gene diversity in this population is 89.52% and is equivalent to the gene diversity of a population originating from approximately five founders (FGE = 4.77). Gene diversity has decreased slightly since last year and will inevitably continue to decrease over time due to random genetic processes, as offspring are produced and as previous generations pass away without passing on all of their alleles to the next generation. Data from other mammalian species has shown that when gene diversity falls below 90% and inbreeding increases, reproduction is increasingly compromised by, among other factors, lower birth weights, smaller litter sizes, and greater neonatal mortality. Recent research on red wolves has shown that higher inbreeding levels in males are correlated with reductions in sperm quality. Breeding success and litter size also appear to decrease with increased inbreeding levels of sires and dams (Lockyear 2006).

One way that the loss of gene diversity can be minimized is by pairing animals so that underrepresented lineages are bred (Figure 4). Pairing animals with the lowest mean kinships helps to equalize founder representation and should be considered a priority, as many genetically valuable animals may soon be too old to reproduce. Founder representation changes with each birth and death, and changes from 2005 to 2007 show that some underrepresented founder lineages (16, 34, 42) have increased in the population in the past years.

In addition, to maintain gene diversity at 90% for a few more years the population could increase its growth rate and/or increase the proportion of breeders in the population (effective population size). Under the current conditions, with a target size of 200 - 250 and a growth rate of 2%, gene diversity can be maintained at or above 85% for 30 years.

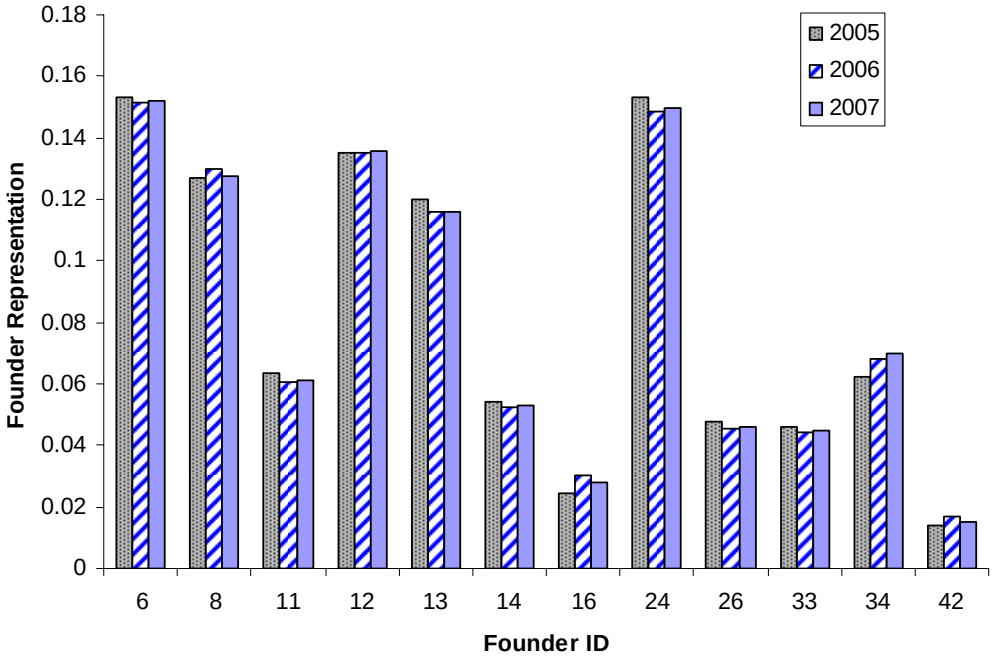

Figure 4. Founder representation graph illustrating the inequality of the 12 founder lineages that have contributed to the captive Red Wolf SSP population and the differences in founder representation across years 2005 - 2007.

Genetics Summary of Red Wolf SSP	***2000***	***2001***	***2002***	***2003***	***2004***	***2005***	***2006***	**2007**	**Potential**
Current Gene Diversity	*90.4*	*90.4*	*90.4*	*90.3*	*90.3*	*89.84*	*89.65*	89.52	93.46
Number of Founders	*12*	*12*	*12*	*12*	*12*	*12*	*12*	12	0
Founder Genome Equivalents	*5.22*	*5.20*	*5.23*	*5.15*	*5.17*	*4.92*	*4.83*	4.77	7.65
Founder Genome Surviving	*8.34*	*8.25*	*8.31*	*8.12*	*--*	*7.89*	*7.80*	7.65	--
Population Mean Kinship	*0.0967*	*0.0961*	*0.096*	*0.0972*	*0.97*	*0.1016*	*0.1035*	0.1048	--
Mean Inbreeding	*0.0537*	*0.0546*	*0.0542*	*0.0562*	*0.0569*	*0.0625*	*0.0630*	0.0670	--
% Known Pedigree	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	--
Years To 90% Gene Diversity	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0	--
Gene Diversity at 100 Years	*70.92*	*72.03*	*74.71*	*75.12*	*76*	*77.8*	*77.8*	77.75	--

Management Strategy: For the next year, the SSP will try to simply offset deaths and maintain the population at its current size, which will require at least 30 births (0% growth rate or lambda = 1.00). The SSP recommends 17 breeding pairs to meet demographic and genetic goals, assuming a litter size of four and taking into account that as few as 25% of pairs may successfully reproduce. Adjustments in recommended pairings may occur prior to next breeding season pending available space, assessment of individual medical cases and transfer logistics. The USFWS also requests consideration of establishing or maintaining breeding pairs near the northeastern North Carolina recovery area to accommodate potential captive to wild fostering opportunities, if possible, given space and logistical considerations. As with all PMP and SSP populations, breeding recommendations are based on mean kinship values, avoidance of inbreeding, avoidance of linking rare and common lineages, and logistical constraints identified by the participating institutions.

Summary and institutional tables in the following pages contain draft recommendations.

1. Recommend 14 breeding pairs.

2. Additional pairs could occur prior to next breeding season depending on available space.

3. An undetermined number of females may be monitored at Tacoma for potential artificial insemination pending logistical and budgetary considerations.

4. Female red wolves with a 'Do not breed' recommendation should be given the 6-month formulation (4.7mg) of Deslorelin (Suprelorin®). Placement should be prior to the onset of pro-estrus to suppress the females. Ordering information and questions can be directed to Sally Boutelle, AZA Wildlife Contraception Center. Phone: 314-781-0900 ext.384 email: contraception@stlzoo.org. The Red Wolf SSP coordinator will contact institutional representatives to confirm contraception for recommended females.

Summary of Breeding and Transfer Recommendations 2007 - 2008

"BREED WITH" = breeding recommended
"PAIR WITH" = social pairing, breeding not recommended or expected
"TBD" = to be determined
Note: addendums (if any) are listed after summary recommendations at each institutional location

ID	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
932	ALEXANDRI	M	10	HOLD	ALEXANDRI	DO NOT BREED		Sterilize
1203	ALEXANDRI	F	5	HOLD	ALEXANDRI	DO NOT BREED		
1651	ALEXANDRI	U	0	HOLD	ALEXANDRI	DO NOT BREED		
1652	ALEXANDRI	U	0	HOLD	ALEXANDRI	DO NOT BREED		
1653	ALEXANDRI	U	0	HOLD	ALEXANDRI	DO NOT BREED		
1654	ALEXANDRI	U	0	HOLD	ALEXANDRI	DO NOT BREED		
1655	ALEXANDRI	U	0	HOLD	ALEXANDRI	DO NOT BREED		
974	ASHEBORO	M	9	HOLD	ASHEBORO	PAIR WITH	1397	excluded
1194	ASHEBORO	M	5	HOLD	ASHEBORO	DO NOT BREED		
1197	ASHEBORO	F	5	HOLD	ASHEBORO	DO NOT BREED		
1366	ASHEBORO	F	3	HOLD	ASHEBORO	BREED WITH	1122	
1392	ASHEBORO	F	2	HOLD	ASHEBORO	DO NOT BREED		
1393	ASHEBORO	F	2	HOLD	ASHEBORO	DO NOT BREED		
1397	ASHEBORO	F	2	HOLD	ASHEBORO	PAIR WITH	974	
983	ASHEVILLE	F	9	HOLD	ASHEVILLE	BREED WITH	1405	valuable older female
1394	ASHEVILLE	M	2	SEND TO	MILL MOUN	DO NOT BREED		
1395	ASHEVILLE	M	2	SEND TO	MILL MOUN	DO NOT BREED		
1396	ASHEVILLE	F	2	SEND TO	MANTEO	BREED WITH	1273	
549	AWENDA	M	15	HOLD	AWENDA	DO NOT BREED		excluded
647	AWENDA	F	14	HOLD	AWENDA	DO NOT BREED		excluded
780	AWENDA	M	12	HOLD	AWENDA	BREED WITH	1370	
1370	AWENDA	F	3	HOLD	AWENDA	BREED WITH	780	
1226	BLOOMINGT	F	5	HOLD	BLOOMINGT	BREED WITH	1414	
1414	BLOOMINGT	M	2	HOLD	BLOOMINGT	BREED WITH	1226	
1020	BREVARD	M	8	HOLD	BREVARD	BREED WITH	1361	
1361	BREVARD	F	3	HOLD	BREVARD	BREED WITH	1020	
1574	BREVARD	F	0	HOLD	BREVARD	DO NOT BREED		Maintain w/ parents
1127	BRIDGEPRT	F	6	HOLD	BRIDGEPRT	DO NOT BREED		
1479	BRIDGEPRT	F	1	SEND TO	TREVOR	DO NOT BREED		companion pair w/ 1380M
1609	BRIDGEPRT	M	0	SEND TO	WSC MN	DO NOT BREED		
1610	BRIDGEPRT	M	0	SEND TO	WSC MN	DO NOT BREED		
1611	BRIDGEPRT	M	0	SEND TO	WSC MN	DO NOT BREED		
1612	BRIDGEPRT	F	0	HOLD	BRIDGEPRT	DO NOT BREED		
1613	BRIDGEPRT	F	0	HOLD	BRIDGEPRT	DO NOT BREED		
1614	BRIDGEPRT	F	0	HOLD	BRIDGEPRT	DO NOT BREED		
1615	BRIDGEPRT	F	0	HOLD	BRIDGEPRT	DO NOT BREED		
620	CHATT NAT	M	14	HOLD	CHATT NAT	DO NOT BREED		excluded
690	CHATT NAT	F	13	HOLD	CHATT NAT	DO NOT BREED		excluded
722	CHATT NAT	M	13	HOLD	CHATT NAT	DO NOT BREED		excluded
744	CHATT NAT	F	13	HOLD	CHATT NAT	DO NOT BREED		excluded
1200	CHATT NAT	M	5	HOLD	CHATT NAT	DO NOT BREED		
1275	CHATT NAT	F	4	HOLD	CHATT NAT	DO NOT BREED		Contracept
1565	CHATT NAT	M	0	HOLD	CHATT NAT	DO NOT BREED		
1566	CHATT NAT	M	0	HOLD	CHATT NAT	DO NOT BREED		
1567	CHATT NAT	M	0	HOLD	CHATT NAT	DO NOT BREED		
1568	CHATT NAT	F	0	HOLD	CHATT NAT	DO NOT BREED		
1569	CHATT NAT	F	0	HOLD	CHATT NAT	DO NOT BREED		

ID	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
842	CHEHAW	M	11	HOLD	CHEHAW	DO NOT BREED		excluded
919	CHEHAW	F	10	HOLD	CHEHAW	DO NOT BREED		
1121	CHICAGOLP	M	6	HOLD	CHICAGOLP	BREED WITH	1353	
1353	CHICAGOLP	F	3	HOLD	CHICAGOLP	BREED WITH	1121	
1587	CHICAGOLP	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1588	CHICAGOLP	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1589	CHICAGOLP	F	0	HOLD	CHICAGOLP	DO NOT BREED		
1590	CHICAGOLP	F	0	HOLD	CHICAGOLP	DO NOT BREED		
1591	CHICAGOLP	F	0	HOLD	CHICAGOLP	DO NOT BREED		
1389	DURHAM MS	M	2	HOLD	DURHAM MS	DO NOT BREED		PRA
1390	DURHAM MS	M	2	HOLD	DURHAM MS	DO NOT BREED		
1391	DURHAM MS	M	2	HOLD	DURHAM MS	DO NOT BREED		
937	FORTWORTH	s	10	SEND TO	TALLAHASE	DO NOT BREED		excluded; companion pair w/ 1359
956	FORTWORTH	M	9	HOLD	FORTWORTH	BREED WITH	1227	
513	FOSSILRIM	M	15	HOLD	FOSSILRIM	DO NOT BREED		excluded
692	FOSSILRIM	F	13	HOLD	FOSSILRIM	DO NOT BREED		excluded
1091	FOSSILRIM	M	7	HOLD	FOSSILRIM	DO NOT BREED		
1363	FOSSILRIM	F	3	HOLD	FOSSILRIM	DO NOT BREED		Contracept
1480	FOSSILRIM	F	1	SEND TO	TACOMA	DO NOT BREED		
1580	FOSSILRIM	M	0	HOLD	FOSSILRIM			
1581	FOSSILRIM	M	0	HOLD	FOSSILRIM			
1582	FOSSILRIM	F	0	HOLD	FOSSILRIM			
1583	FOSSILRIM	F	0	HOLD	FOSSILRIM			
1584	FOSSILRIM	F	0	HOLD	FOSSILRIM			
1585	FOSSILRIM	F	0	HOLD	FOSSILRIM			
1586	FOSSILRIM	F	0	HOLD	FOSSILRIM			
687	FRESNO	M	13	HOLD	FRESNO	DO NOT BREED		excluded
1386	FRESNO	M	2	HOLD	FRESNO	DO NOT BREED		
1387	FRESNO	M	2	HOLD	FRESNO	DO NOT BREED		
725	GOLDENPND	F	13	HOLD	GOLDENPND	DO NOT BREED		excluded
1201	GOLDENPND	M	5	HOLD	GOLDENPND	DO NOT BREED		
724	JACKSON	M	13	HOLD	JACKSON	DO NOT BREED		excluded
1129	JACKSON	F	6			TBD		valuable female--should breed
557	JACKSONVL	F	15	HOLD	JACKSONVL	DO NOT BREED		excluded
1125	JACKSONVL	M	6	HOLD	JACKSONVL	DO NOT BREED		
622	KNOXVILLE	F	14	HOLD	KNOXVILLE	DO NOT BREED		excluded
917	KNOXVILLE	s	10	HOLD	KNOXVILLE	DO NOT BREED		excluded
1360	KNOXVILLE	F	3	HOLD	KNOXVILLE	DO NOT BREED		
1408	KNOXVILLE	M	2	HOLD	KNOXVILLE	DO NOT BREED		
720	LOWRY	F	13	HOLD	LOWRY	DO NOT BREED		excluded
779	LOWRY	M	12			TBD		valuable older male--seek a suitable mate
793	LOWRY	F	12	HOLD	LOWRY	DO NOT BREED		excluded
1274	LOWRY	F	4	HOLD	LOWRY	DO NOT BREED		
1375	LOWRY	M	2	HOLD	LOWRY	DO NOT BREED		
1460	LOWRY	M	2	HOLD	LOWRY	DO NOT BREED		
1563	LOWRY	F	0	HOLD	LOWRY	DO NOT BREED		
1564	LOWRY	F	0	HOLD	LOWRY	DO NOT BREED		
1276	MANTEO	F	4	HOLD	MANTEO	DO NOT BREED		
1400	MANTEO	M	2	HOLD	MANTEO	DO NOT BREED		
1403	MANTEO	F	2	HOLD	MANTEO	DO NOT BREED		
1404	MANTEO	F	2	HOLD	MANTEO	DO NOT BREED		
632	NCS RAL	M	14	HOLD	NCS RAL	DO NOT BREED		excluded
640	NCS RAL	M	14	HOLD	NCS RAL	DO NOT BREED		excluded

ID	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
1291	NYWOLF	F	4	HOLD	NYWOLF	BREED WITH	1369	
1369	NYWOLF	M	3	HOLD	NYWOLF	BREED WITH	1291	
619	OKLAHOMA	M	14	HOLD	OKLAHOMA	DO NOT BREED		excluded
1196	OKLAHOMA	F	5	HOLD	OKLAHOMA	DO NOT BREED		
624	PROVIDNCE	s	14	HOLD	PROVIDNCE	DO NOT BREED		excluded
1097	PROVIDNCE	M	7	HOLD	PROVIDNCE	BREED WITH	1287	
1287	PROVIDNCE	F	4	HOLD	PROVIDNCE	BREED WITH	1097	
1292	PROVIDNCE	s	4	HOLD	PROVIDNCE	DO NOT BREED		excluded
816	SALIS NC	M	11	HOLD	SALIS NC	DO NOT BREED		Sterilize
1195	SALIS NC	F	5	HOLD	SALIS NC	DO NOT BREED		
1575	SALIS NC	F	0	HOLD	SALIS NC	DO NOT BREED		
1576	SALIS NC	F	0	HOLD	SALIS NC	DO NOT BREED		
924	SIOUX FAL	M	10	HOLD	SIOUX FAL	BREED WITH	958	
958	SIOUX FAL	F	9	HOLD	SIOUX FAL	BREED WITH	924	
957	SPRINGFIE	M	9	SEND TO	WSC MN	BREED WITH	1225	
1204	SPRINGFIE	F	5	HOLD	SPRINGFIE	DO NOT BREED		
1604	SPRINGFIE	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1605	SPRINGFIE	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1606	SPRINGFIE	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1607	SPRINGFIE	F	0	HOLD	SPRINGFIE	DO NOT BREED		
1608	SPRINGFIE	F	0	HOLD	SPRINGFIE	DO NOT BREED		
1398	SYRACUSE	F	2	HOLD	SYRACUSE	DO NOT BREED		Contracept-companion pair w/ 1379
515	TACOMA	F	15	HOLD	TACOMA	DO NOT BREED		excluded
543	TACOMA	M	15	HOLD	TACOMA	DO NOT BREED		excluded
645	TACOMA	M	14	HOLD	TACOMA	DO NOT BREED		excluded
648	TACOMA	F	14	HOLD	TACOMA	DO NOT BREED		excluded
704	TACOMA	F	13	HOLD	TACOMA	DO NOT BREED		excluded
740	TACOMA	M	13	HOLD	TACOMA	DO NOT BREED		excluded
938	TACOMA	F	10	HOLD	TACOMA	BREED WITH	1286	
939	TACOMA	M	10	HOLD	TACOMA	DO NOT BREED		
1009	TACOMA	F	8	HOLD	TACOMA	DO NOT BREED		
1010	TACOMA	F	8	HOLD	TACOMA	DO NOT BREED		
1095	TACOMA	M	7	HOLD	TACOMA	DO NOT BREED		
1123	TACOMA	F	6	HOLD	TACOMA	DO NOT BREED		
1224	TACOMA	F	5	SEND TO	VICTOR TX	BREED WITH	1092	
1228	TACOMA	F	5	HOLD	TACOMA	DO NOT BREED		
1277	TACOMA	M	4	HOLD	TACOMA	DO NOT BREED		
1278	TACOMA	M	4	HOLD	TACOMA	DO NOT BREED		
1279	TACOMA	M	4	HOLD	TACOMA	DO NOT BREED		
1280	TACOMA	F	4	HOLD	TACOMA	DO NOT BREED		
1281	TACOMA	F	4	HOLD	TACOMA	DO NOT BREED		
1284	TACOMA	M	4	HOLD	TACOMA	DO NOT BREED		
1286	TACOMA	M	4	HOLD	TACOMA	BREED WITH	938	
1364	TACOMA	F	3	HOLD	TACOMA	DO NOT BREED		
1381	TACOMA	M	2	HOLD	TACOMA	BREED WITH	1385	
1382	TACOMA	F	2	HOLD	TACOMA	DO NOT BREED		
1388	TACOMA	F	2	SEND TO	GREENBAY	BREED WITH	1464	
1405	TACOMA	M	2	SEND TO	ASHEVILLE	BREED WITH	983	
1406	TACOMA	F	2	HOLD	TACOMA	DO NOT BREED		
1407	TACOMA	F	2	HOLD	TACOMA	DO NOT BREED		
1415	TACOMA	F	2	HOLD	TACOMA	DO NOT BREED		
1416	TACOMA	F	2	HOLD	TACOMA	DO NOT BREED		
1467	TACOMA	M	1	HOLD	TACOMA	DO NOT BREED		
1468	TACOMA	M	1	HOLD	TACOMA	DO NOT BREED		
1482	TACOMA	M	1	HOLD	TACOMA	DO NOT BREED		
1483	TACOMA	M	1	HOLD	TACOMA	DO NOT BREED		

ID	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
1484	TACOMA	M	1	HOLD	TACOMA	DO NOT BREED		
1485	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1486	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1487	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1488	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1489	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1490	TACOMA	M	1	HOLD	TACOMA	DO NOT BREED		
1491	TACOMA	M	1	HOLD	TACOMA	DO NOT BREED		
1492	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1495	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1496	TACOMA	F	1	HOLD	TACOMA	DO NOT BREED		
1601	TACOMA	M	0	HOLD	TACOMA	DO NOT BREED		
1602	TACOMA	F	0	HOLD	TACOMA	DO NOT BREED		
1603	TACOMA	F	0	HOLD	TACOMA	DO NOT BREED		
1618	TACOMA	F	0	HOLD	TACOMA	DO NOT BREED		
1619	TACOMA	F	0	HOLD	TACOMA	DO NOT BREED		
1359	TALLAHASE	M	3	HOLD	TALLAHASE	DO NOT BREED		companion pair w/ 937F
1376	TALLAHASE	F	2	HOLD	TALLAHASE	DO NOT BREED		
1377	TALLAHASE	F	2	HOLD	TALLAHASE	DO NOT BREED		
1378	TALLAHASE	F	2	HOLD	TALLAHASE	DO NOT BREED		
1379	TREVOR	M	2	SEND TO	SYRACUSE	DO NOT BREED		companion pair w/ 1398
1380	TREVOR	M	2	HOLD	TREVOR	DO NOT BREED		PRA - companion pair w/ 1479
1126	VA MUSEUM	F	6	HOLD	VA MUSEUM	DO NOT BREED		
1273	VA MUSEUM	M	4	SEND TO	MANTEO	BREED WITH	1396	w/ 1396 from ASHEVILLE
1473	VA MUSEUM	F	1	SEND TO	MANTEO	DO NOT BREED		
1594	VA MUSEUM	M	0	HOLD	VA MUSEUM	DO NOT BREED		
1595	VA MUSEUM	M	0	HOLD	VA MUSEUM	DO NOT BREED		
1596	VA MUSEUM	M	0	HOLD	VA MUSEUM	DO NOT BREED		
1598	VA MUSEUM	F	0	SEND TO	MANTEO	DO NOT BREED		
1599	VA MUSEUM	F	0	SEND TO	MANTEO	DO NOT BREED		
1600	VA MUSEUM	F	0	SEND TO	MANTEO	DO NOT BREED		
559	VICTOR TX	s	15	HOLD	VICTOR TX	DO NOT BREED		excluded; w/ 791 from WCSRC
1092	VICTOR TX	M	7	HOLD	VICTOR TX	BREED WITH	1224	
1227	VICTOR TX	F	5	SEND TO	FORTWORTH	BREED WITH	956	
791	WCSRC	M	12	SEND TO	VICTOR TX	DO NOT BREED		excluded; w/ 559 for companion
819	WCSRC	F	11	HOLD	WCSRC	DO NOT BREED		excluded
918	WCSRC	s	10	SEND TO	COAL VAL	DO NOT BREED		excluded
1409	WCSRC	F	2	SEND TO	COAL VAL	DO NOT BREED		
1410	WCSRC	F	2	SEND TO	COAL VAL	DO NOT BREED		
1464	WCSRC	M	1	SEND TO	GREENBAY	BREED WITH	1388	
1465	WCSRC	F	1	HOLD	WCSRC	DO NOT BREED		
1593	WCSRC	F	0	HOLD	WCSRC	DO NOT BREED		
953	WHEELING	M	9	HOLD	WHEELING	DO NOT BREED		valuable; consider re-pairing??
1021	WHEELING	F	8	HOLD	WHEELING	DO NOT BREED		valuable; consider re-pairing??
688	WOLFHAVEN	M	13	HOLD	WOLFHAVEN	BREED WITH	1096	excluded due to age; low likelihood pair
1096	WOLFHAVEN	F	7	HOLD	WOLFHAVEN	BREED WITH	688	low likelihood pair

ID	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
1222	WOLFHAVEN	s	5	HOLD	WOLFHAVEN	DO NOT BREED		excluded; Send companion from TACOMA
1385	WOLFHAVEN	F	2	SEND TO	TACOMA	BREED WITH	1381	
1122	WSC MN	M	6	SEND TO	ASHEBORO	BREED WITH	1366	
1225	WSC MN	F	5	HOLD	WSC MN	BREED WITH	957	
1401	WSC MN	M	2	HOLD	WSC MN	DO NOT BREED		
1402	WSC MN	M	2	HOLD	WSC MN	DO NOT BREED		

ALEXANDRI

Alexandria Zoological Park
Alexandria, LA

Institutional contact/representative: Lisa Laskoski (318) 441-6819 – lisa.laskoski@cityofalex.com
Les Whitt (318) 473-1143 – les.whitt@cityofalex.com

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
932	M00232	M	10	HOLD	ALEXANDRI	DO NOT BREED		Sterilize given age and MK
1203	M00276	F	5	HOLD	ALEXANDRI	DO NOT BREED		
1651	M00291	F	0	HOLD	ALEXANDRI	DO NOT BREED		
1652	M00292	M	0	HOLD	ALEXANDRI	DO NOT BREED		
1653	M00293	F	0	HOLD	ALEXANDRI	DO NOT BREED		

Summary:
Before transfers: 1 male, 1 female, 5 unknowns
After transfers: 1 male, 1 female, 5 unknowns
No Change

ASHEBORO

North Carolina Zoological Park
Asheboro, NC

Institutional contact/representative: Chris Lasher (336) 879-7364 – chris.lasher@nczoo.org

Transfer: **None**

Receive: **1122M from WSC MN**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
974	1744	M	9	HOLD	ASHEBORO	DO NOT BREED		Excluded pair with 1397F. Internal move.
1194	1676	M	5	HOLD	ASHEBORO	DO NOT BREED		
1197	1689	F	5	HOLD	ASHEBORO	DO NOT BREED		
1366	1654	F	3	HOLD	ASHEBORO	BREED WITH	1122	
1392	1710	F	2	HOLD	ASHEBORO	DO NOT BREED		
1393	1711	F	2	HOLD	ASHEBORO	DO NOT BREED		
1397	1755	F	2	HOLD	ASHEBORO	DO NOT BREED		
1122	1122	M	6	RECEIVE FROM	WSC MN	BREED WITH	1366	

Summary:
Before transfers: 2 males, 5 females, 0 unknowns
After transfers: 3 males, 5 females, 0 unknowns
Addendum: 974M transferred to SALISBURY

ASHEVILLE

Western NC Nature Center
Asheville, NC

Institutional contact/representative: Henry Bulluck (828)298-5600 x311 – hbulluck@ashevillenc.gov

Transfer: **1394M & 1395M to MILL MOUN**
1396F to MANTEO

Receive: ~~**1405M from TACOMA**~~

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
983	02M301	F	9	HOLD	ASHEVILLE	BREED WITH	1405	valuable older female
1394	05M301	M	2	SEND TO	MILL MOUN	DO NOT BREED		
1395	05M302	M	2	SEND TO	MILL MOUN	DO NOT BREED		
1396	05M303	F	2	SEND TO	MANTEO	BREED WITH	1273	
~~1405~~	~~01405~~	~~M~~	~~2~~	~~RECEIVE FROM~~	~~TACOMA~~	~~BREED WITH~~	~~983~~	

Summary:
Before transfers: 2 males, 2 females, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
Addendum: Receive 953M from WHEELING instead of 1405M from TACOMA

AWENDA

Cape Romain Nat'l Wildlife Refuge
Awenda, SC

Institutional contact/representative: Sarah Dawsey (843) 928-3264 – sarah_dawsey@fws.gov

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
549	10549	M	15	HOLD	AWENDA	DO NOT BREED		excluded
647	10647	F	14	HOLD	AWENDA	DO NOT BREED		excluded
780	10780	M	12	HOLD	AWENDA	BREED WITH	1370	
1370	11370	F	3	HOLD	AWENDA	BREED WITH	780	

Summary:
Before transfers: 2 males, 2 females, 0 unknowns
After transfers: 2 males, 2 females, 0 unknowns
No Change

BLOOMINGT

Miller Park Zoo
Bloomington, IL
Institutional contact/representative: John Tobias (309) 434-2825 – jtobias@cityblm.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
~~1226~~	~~M04003~~	~~F~~	~~5~~	~~HOLD~~	~~BLOOMINGT~~	~~BREED WITH~~	~~1414~~	
1414	MO7007	M	2	HOLD	BLOOMINGT	BREED WITH	1226	

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
Addendum: 1226F died prior to breeding season.

BREVARD

Brevard Zoo
Melbourne, FL
Institutional contact/representative: Michelle Smurl (321)254-9453 x217 – msmurl@brevardzoo.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1020	24079	M	8	HOLD	BREVARD	BREED WITH	1361	
1361	27010	F	3	HOLD	BREVARD	BREED WITH	1020	
1574	27029	F	0	HOLD	BREVARD	DO NOT BREED		Maintain w/ parents

Summary:
Before transfers: 1 male, 2 females, 0 unknowns
After transfers: 1 male, 2 females, 0 unknowns
No change

BRIDGEPRT

Connecticut's Beardsley Zoological Gardens
Bridgeport, CT
Institutional contact/representative: Don Goff (203)394-6564 – dgoff@beardsleyzoo.org

Transfer: **1479F to TREVOR**
1609M, 1610M, 1611M to WSC MN

Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1127	101359	F	6	HOLD	BRIDGEPRT	DO NOT BREED		
1479	101728	F	1	SEND TO	TREVOR	DO NOT BREED		companion pair w/ 1380M
1609	101820	M	0	SEND TO	WSC MN	DO NOT BREED		
1610	101823	M	0	SEND TO	WSC MN	DO NOT BREED		
1611	101824	M	0	SEND TO	WSC MN	DO NOT BREED		
1612	101821	F	0	HOLD	BRIDGEPRT	DO NOT BREED		
1613	101822	F	0	HOLD	BRIDGEPRT	DO NOT BREED		
1614	101825	F	0	HOLD	BRIDGEPRT	DO NOT BREED		
1615	101826	F	0	HOLD	BRIDGEPRT	DO NOT BREED		

Summary:
Before transfers: 3 males, 6 females, 0 unknowns
After transfers: 0 males, 5 females, 0 unknowns
Addendum: **No change planned, although working to identify alternative location for males recommended for transfer to WSC MN if unable to complete transfer.**

CHATT NAT

Chattanooga Nature Center
Chattanooga, TN
Institutional contact/representative: Tish Gailmard (423) 821-1160 x103 – tgailmard@chattanature.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
620	620	M	14	HOLD	CHATT NAT	DO NOT BREED		excluded
690	690	F	13	HOLD	CHATT NAT	DO NOT BREED		excluded
722	722	M	13	HOLD	CHATT NAT	DO NOT BREED		excluded
744	744	F	13	HOLD	CHATT NAT	DO NOT BREED		excluded
1200	1200	M	5	HOLD	CHATT NAT	DO NOT BREED		
1275	1275	F	4	HOLD	CHATT NAT	DO NOT BREED		Contracept
1565	1565	M	0	HOLD	CHATT NAT	DO NOT BREED		
1566	1566	M	0	HOLD	CHATT NAT	DO NOT BREED		
1567	1567	M	0	HOLD	CHATT NAT	DO NOT BREED		
1568	1568	F	0	HOLD	CHATT NAT	DO NOT BREED		
1569	1569	F	0	HOLD	CHATT NAT	DO NOT BREED		

Summary:
Before transfers: 6 males, 5 females, 0 unknowns
After transfers: 6 males, 5 females, 0 unknowns
No Change

CHEHAW

Chehaw Wild Animal Park
Albany, GA
Institutional contact/representative: Jan Thompson (229) 430-5275 – jthompson@parksatchehaw.org

Transfer: **TBD – may consider sterilizing 919F and send to JACKSONVL or TALLAHASE as companion**

Receive: **TBD**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
842		M	11	HOLD	CHEHAW	DO NOT BREED		excluded
919	MO3009	F	10	HOLD	CHEHAW	DO NOT BREED		

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
Addendum: 919F identified for possible transfer to TALLAHASE

CHICAGOLP

Lincoln Park Zoo
Chicago, IL
Institutional contact/representative: Diane Mulkerin (312) 742-2376 – dmulkerin@lpzoo.org

Transfer: **1587M, 1588M to WCSRC**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1121	21600	M	6	HOLD	CHICAGOLP	BREED WITH	1353	
1353	21456	F	3	HOLD	CHICAGOLP	BREED WITH	1121	
1587	21878	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1588	21879	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1589	21880	F	0	HOLD	CHICAGOLP	DO NOT BREED		
1590	21881	F	0	HOLD	CHICAGOLP	DO NOT BREED		
1591	21882	F	0	HOLD	CHICAGOLP	DO NOT BREED		

Summary:
Before transfers: 3 males, 4 females, 0 unknowns
After transfers: 1 male, 4 females, 0 unknowns
Addendum: Transfer of males to WCSRC delayed due to space logistics

COAL VAL

Niabi Zoo

Coal Valley, IL

Institutional contact/representative: Tom Stalf (309) 779-3482 – tstalf@niabizoo.com

Transfer: **None**
Receive: **918f, 1409F, 1410F from WCSRC**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
918	200414	s	10	RECEIVE FROM	WCSRC	DO NOT BREED		excluded
1409	200535	F	2	RECEIVE FROM	WCSRC	DO NOT BREED		
1410	200536	F	2	RECEIVE FROM	WCSRC	DO NOT BREED		

Summary:
Before transfers: 0 males, 0 females, 0 unknowns
After transfers: 0 males, 2 females, 0 unknowns, 1 sterile

No change

DURHAM MS

North Carolina Museum of Life and Science

Durham, NC

Institutional contact/representative: Sherry Samuels (919) 220-5429 x333 – sherry.samuels@ncmls.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1389	08M05	M	2	HOLD	DURHAM MS	DO NOT BREED		
1390	09M05	M	2	HOLD	DURHAM MS	DO NOT BREED		
1391	10M05	M	2	HOLD	DURHAM MS	DO NOT BREED		

Summary:
Before transfers: 3 males, 0 females, 0 unknowns
After transfers: 3 males, 0 females, 0 unknowns

No change: **1391M diagnosed with PRA**

FORTWORTH

Fort Worth Zoological Park
Ft Worth, TX
Institutional contact/representative: John Ward (817) 759-7196 – jward@fortworthzoo.org

Transfer: **On Hold - TBD**
Receive: **On Hold - TBD**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
~~937~~	~~202057~~	~~s~~	~~10~~	~~SEND TO~~	~~TALLAHASE~~	~~DO NOT BREED~~		excluded; companion pair w/ 1359 @ TALLAHASE. Note: recent medical issues may prevent transfer.
956	201422	M	9	HOLD	FORTWORTH	BREED WITH	1227	
~~1227~~	~~200504~~	~~F~~	~~5~~	~~RECEIVE FROM~~	~~VICTOR TX~~	~~BREED WITH~~	~~956~~	

Summary:
Before transfers: 1 male, 0 female, 0 unknowns, 1 sterile
After transfers: 1 male, 1 female, 0 unknowns
Addendum: Unable to complete transfers due to 937f medical status

FOSSILRIM

Fossil Rim Wildlife Center
Glen Rose, TX
Institutional contact/representative: Mary Jo Stearns (254) 897-2960 x314 – maryjos@fossilrim.com

Transfer: **1480F to TACOMA**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
513	5028	M	15	HOLD	FOSSILRIM	DO NOT BREED		excluded
692		F	13	HOLD	FOSSILRIM	DO NOT BREED		excluded
1091	5053	M	7	HOLD	FOSSILRIM	DO NOT BREED		
1363	5051	F	3	HOLD	FOSSILRIM	DO NOT BREED		Contracept
1480	5054	F	1	SEND TO	TACOMA	DO NOT BREED		
1580	5056	M	0	HOLD	FOSSILRIM			
1581	5057	M	0	HOLD	FOSSILRIM			
1582	5058	F	0	HOLD	FOSSILRIM			
1583	5059	F	0	HOLD	FOSSILRIM			
1584	5060	F	0	HOLD	FOSSILRIM			
1585	5061	F	0	HOLD	FOSSILRIM			
1586	5062	F	0	HOLD	FOSSILRIM			

Summary:
Before transfers: 4 males, 8 females, 0 unknowns
After transfers: 4 males, 7 females, 0 unknowns
No change

FRESNO

Chaffee Zool Gardens of Fresno
Fresno, CA
Institutional contact/representative: Andy Snider (559) 498-5910 – asnider@fresonchaffeezoo.com

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
687		M	13	HOLD	FRESNO	DO NOT BREED		excluded
1386	250024	M	2	HOLD	FRESNO	DO NOT BREED		
1387	250025	M	2	HOLD	FRESNO	DO NOT BREED		

Summary:
Before transfers: 3 males, 0 females, 0 unknowns
After transfers: 3 males, 0 females, 0 unknowns
No change

GOLDENPND

Land Between the Lakes
Golden Pond, KY
Institutional contact/representative: Darrin Samborski (270) 924-2050 – dsamborski@fs.fed.us

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
725	725	F	13	HOLD	GOLDENPND	DO NOT BREED		excluded
1201	1201	M	5	HOLD	GOLDENPND	DO NOT BREED		

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
No Change

GREENBAY

Northeastern Wisconsin Zoo
Green Bay, WI
Institutional contact/representative: Carmen Murach (920) 434-8597 – Murach_CD@co.brown.wi.us

Transfer: **None**
Receive: **1388F from TACOMA**
1464M from WCSRC

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1388	01388	F	2	RECEIVE FROM	TACOMA	BREED WITH	1464	
1464	200603	M	1	RECEIVE FROM	WCSRC	BREED WITH	1388	

Summary:
Before transfers: 0 males, 0 females, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
No Change

JACKSON

Jackson Zoological Park
Jackson, MS
Institutional contact/representative: Dave Wetzel (601) 352-2590 – dlwetzel@msn.com

Transfer: **None**
Receive: **TBD**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
724	200377	M	13	HOLD	JACKSON	DO NOT BREED		excluded
1129	200137	F	6			TBD		valuable female--should breed

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
No Change

JACKSONVL

Jacksonville Zoological Gardens
Jacksonville, FL
Institutional contact/representative: Craig Miller (904) 757-4463 x136 – millerc@jaxzoo.org

Transfer: **None**
Receive: **TBD**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
557	801304	F	15	HOLD	JACKSONVL	DO NOT BREED		excluded
1125	805374	M	6	HOLD	JACKSONVL	DO NOT BREED		

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
Addendum: 557F died during comment period
1125M diagnosed with PRA (sterilize) and receive female from TALLAHASE

KNOXVILLE

Knoxville Zoological Gardens
Knoxville, TN
Institutional contact/representative: Lisa New (865) 637-5331 x329 – lnew@knoxville-zoo.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
622	1568	F	14	HOLD	KNOXVILLE	DO NOT BREED		excluded
917	1896	s	10	HOLD	KNOXVILLE	DO NOT BREED		excluded
1360	3167	F	3	HOLD	KNOXVILLE	DO NOT BREED		
1408	3386	M	2	HOLD	KNOXVILLE	DO NOT BREED		

Summary:
Before transfers: 1 male, 2 females, 0 unknowns, 1 sterile
After transfers: 1 male, 2 females, 0 unknowns, 1 sterile
Addendum: 1360F contracepted with deslorelin

LOWRY

Lowry Park Zoological Garden
Tampa, FL

Institutional contact/representative: Lee Ann Rottman (813) 935-8552 x221 – curator@lowryparkzoo.com

Transfer: **TBD**
Receive: **TBD**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
720	102308	F	13	HOLD	LOWRY	DO NOT BREED		excluded
779	102018	M	12	HOLD	LOWRY	TBD		valuable older male--seek a suitable mate
793	100923	F	12	HOLD	LOWRY	DO NOT BREED		excluded
1274	102264	F	4	HOLD	LOWRY	DO NOT BREED		
1375	102291	M	2	HOLD	LOWRY	DO NOT BREED		
1460	102082	M	2	HOLD	LOWRY	DO NOT BREED		
1563	102334	F	0	HOLD	LOWRY	DO NOT BREED		
1564	102335	F	0	HOLD	LOWRY	DO NOT BREED		

Summary:
Before transfers: 3 males, 5 females, 0 unknowns
After transfers: 3 males, 5 females, 0 unknowns
Addendum: Maintain 779M with 1274F and '07 pups due to space limitations

MANTEO

Alligator River Nat'l Wldlf Refuge
Manteo, NC
Institutional contact/representative: Art Beyer (252) 473-1131 x241 – arthur_beyer@fws.gov

Transfer: **TBD – will try to place 1400M, 1403F, or 1404F**
Receive: **1396F from ASHEVILLE**
~~**1273M from VA MUSEUM (pending)**~~
1473F, 1598F, 1599F, 1600F from VA MUSEUM

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1396	05M303	F	2	RECEIVE FROM	ASHEVILLE	BREED WITH	1273	
1276	11276	F	4	HOLD	MANTEO	DO NOT BREED		
1400	11400	M	2	HOLD	MANTEO	DO NOT BREED		
1403	11403	F	2	HOLD	MANTEO	DO NOT BREED		
1404	11404	F	2	HOLD	MANTEO	DO NOT BREED		
~~1273~~	~~1222~~	~~M~~	~~4~~	~~RECEIVE FROM~~	~~VA MUSEUM~~	~~BREED WITH~~	~~1396~~	~~Pending medical assessment~~
1473	1231	F	1	RECEIVE FROM	VA MUSEUM	DO NOT BREED		
1598	1598	F	0	RECEIVE FROM	VA MUSEUM	DO NOT BREED		
1599	1599	F	0	RECEIVE FROM	VA MUSEUM	DO NOT BREED		
1600	1600	F	0	RECEIVE FROM	VA MUSEUM	DO NOT BREED		

Summary:
Before transfers: 1 male, 3 females, 0 unknowns
After transfers: 2 males, 8 females, 0 unknowns
Addendum: 1273M to stay at VA MUSEUM. Unable to identify suitable replacement for this breeding season

MILL MOUN

Mill Mountain Zoo
Roanoke, VA
Institutional contact/representative: David Orndorff (540) 343-3241 x31 – dorndorff@mmzoo.org

Transfer: **None**
Receive: **1394M, 1395M from ASHEVILLE**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1394	05M301	M	2	RECEIVE FROM	ASHEVILLE	DO NOT BREED		
1395	05M302	M	2	RECEIVE FROM	ASHEVILLE	DO NOT BREED		

Summary:
Before transfers: 0 males, 0 females, 0 unknowns
After transfers: 2 males, 0 females, 0 unknowns
No Change

NCS RAL

North Carolina State Univ Dept Zool
Raleigh, NC
Institutional contact/representative: Michael Stoskopf (919) 513-6279 – mkstosko@unity.ncsu.edu

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
632	10632	M	14	HOLD	NCS RAL	DO NOT BREED		excluded
640	10640	M	14	HOLD	NCS RAL	DO NOT BREED		excluded

Summary:
Before transfers: 2 males, 0 females, 0 unknowns
After transfers: 2 males, 0 females, 0 unknowns
No Change

NYWOLF

Wolf Conservation Center of New York
South Salem, NY
Institutional contact/representative: Maggie Howell (914) 763-2373 – maggie@nywolf.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1291	_____	F	4	HOLD	NYWOLF	BREED WITH	1369	
1369	_____	M	3	HOLD	NYWOLF	BREED WITH	1291	

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
No Change

OKLAHOMA

Oklahoma City Zoological Park
Oklahoma City, OK
Institutional contact/representative: Jon Reding (405) 425-0225 – jreding@okczoo.com

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
619	770521	M	14	HOLD	OKLAHOMA	DO NOT BREED		excluded
1196	770119	F	5	HOLD	OKLAHOMA	DO NOT BREED		

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
No Change

PROVIDNCE

Roger Williams Park Zoo
Providence, RI
Institutional contact/representative: Becca Keene (401) 785-3510 – bkeene@rwpzoo.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
624	931051	F	14	HOLD	PROVIDNCE	DO NOT BREED		excluded
1097	100119	M	7	HOLD	PROVIDNCE	BREED WITH	1287	
1287	100192	F	4	HOLD	PROVIDNCE	BREED WITH	1097	
1292	100196	s	4	HOLD	PROVIDNCE	DO NOT BREED		excluded

Summary:
Before transfers: 1 male, 2 females, 0 unknowns, 1 sterile
After transfers: 1 male, 2 females, 0 unknowns, 1 sterile
No Change

SALISBURY

Salisbury Zoological Park
Salisbury, MD
Institutional contact/representative: Ann Konopik (410) 548-3116 – akonopik@ci.salisbury.md.us

Transfer: **None**
Receive: **TBD when exhibit is completed**
Addendum: Receive 974M from ASHEBORO & 1126F from VA MUSEUM

SALIS NC

Dan Nicholas Nature Center
Salisbury, NC
Institutional contact/representative: Bob Pendergrass (704) 216-7819 – bobpend@co.rowan.nc.us

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
816	816	M	11	HOLD	SALIS NC	DO NOT BREED		Sterilize (age/MK)
1195	1195	F	5	HOLD	SALIS NC	DO NOT BREED		
1575	1575	F	0	HOLD	SALIS NC	DO NOT BREED		
1576	1576	F	0	HOLD	SALIS NC	DO NOT BREED		

Summary:
Before transfers: 1 male, 3 females, 0 unknowns
After transfers: 1 male, 3 females, 0 unknowns
No Change

SIOUX FAL

Great Plains Zoo
Sioux Falls, SD
Institutional contact/representative: Jay Tetzloff (605) 367-7003 – jtetzloff@gpzoo.org

Transfer: **None**
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
924	3232	M	10	HOLD	SIOUX FAL	BREED WITH	958	
958	2164	F	9	HOLD	SIOUX FAL	BREED WITH	924	

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
No Change

SPRINGFIE

Henson Robinson Zoo
Springfield, IL
Institutional contact/representative: Talon Thornton (217) 753-6217 – tthornton@hensonrobinsonzoo.org

Transfer: **1604M, 1605M, 1606M to WCSRC**
957M to WSC MN
Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
957	853	M	9	SEND TO	WSC MN	BREED WITH	1225	
1204	848	F	5	HOLD	SPRINGFIE	DO NOT BREED		
1604	902	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1605	903	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1606	904	M	0	SEND TO	WCSRC	DO NOT BREED		bachelor group
1607	905	F	0	HOLD	SPRINGFIE	DO NOT BREED		
1608	906	F	0	HOLD	SPRINGFIE	DO NOT BREED		

Summary:
Before transfers: 4 males, 3 females, 0 unknowns
After transfers: 0 males, 3 females, 0 unknowns
Addendum: Transfer of males to WCSRC delayed due to space logistics

SYRACUSE

Burnet Park Zoo (Rosamond Gifford Zoo)
Syracuse, NY

Institutional contact/representative: Tom Labarge (315) 435-8511 x122 – markhor_3@hotmail.com

Transfer: **None**
Receive: **1379M from TREVOR**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1398	MO5094	F	2	HOLD	SYRACUSE	DO NOT BREED		Contracept: companion pair w/ 1379
1379	A5M678	M	2	RECEIVE FROM	TREVOR	DO NOT BREED		companion pair w/ 1398

Summary:
Before transfers: 0 males, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns
No Change

TACOMA

Point Defiance Zoo & Aquarium
Tacoma, WA

Institutional contact/representative: Will Waddell (253) 858-9172 -- wwaddell@pdza.org

Transfer: ~~**1405M to ASHEVILLE**~~
~~**1224F to VICTOR TX (Pending)**~~
Female TBD to WOLFHAVEN

Receive: **1480F from FOSSILRIM**
1385F from WOLFHAVEN

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1480	5054	F	1	RECEIVE FROM	FOSSILRIM	DO NOT BREED		
515	0515	F	15	HOLD	TACOMA	DO NOT BREED		excluded
543	0543	M	15	HOLD	TACOMA	DO NOT BREED		excluded
645	0645	M	14	HOLD	TACOMA	DO NOT BREED		excluded
648	0648	F	14	HOLD	TACOMA	DO NOT BREED		excluded
704	0704	F	13	HOLD	TACOMA	DO NOT BREED		excluded
740	0740	M	13	HOLD	TACOMA	DO NOT BREED		excluded
938	0938	F	10	HOLD	TACOMA	BREED WITH	1286	
939	0939	M	10	HOLD	TACOMA	DO NOT BREED		
1009	01009	F	8	HOLD	TACOMA	DO NOT BREED		
1010	01010	F	8	HOLD	TACOMA	DO NOT BREED		
1095	01095	M	7	HOLD	TACOMA	DO NOT BREED		
1123	01123	F	6	HOLD	TACOMA	DO NOT BREED		
~~1224~~	~~01224~~	~~F~~	~~5~~	~~SEND TO~~	~~VICTOR TX~~	~~BREED WITH~~	~~1092~~	~~Pending~~
1228	01228	F	5	HOLD	TACOMA	DO NOT BREED		
1277	01277	M	4	HOLD	TACOMA	DO NOT BREED		
1278	01278	M	4	HOLD	TACOMA	DO NOT BREED		
1279	01279	M	4	HOLD	TACOMA	DO NOT BREED		
1280	01280	F	4	HOLD	TACOMA	DO NOT BREED		
1281	01281	F	4	HOLD	TACOMA	DO NOT BREED		
1284	01284	M	4	HOLD	TACOMA	DO NOT BREED		
1286	01286	M	4	HOLD	TACOMA	BREED WITH	938	

TACOMA continued								
ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1364	01364	F	3	HOLD	TACOMA	DO NOT BREED		
1381	01381	M	2	HOLD	TACOMA	BREED WITH	1385	
1382	01382	F	2	HOLD	TACOMA	DO NOT BREED		
1388	01388	F	2	SEND TO	GREENBAY	BREED WITH	1464	
~~1405~~	~~01405~~	~~M~~	~~2~~	~~SEND TO~~	~~ASHEVILLE~~	~~BREED WITH~~	~~983~~	
1406	01406	F	2	HOLD	TACOMA	DO NOT BREED		
1407	01407	F	2	HOLD	TACOMA	DO NOT BREED		
1415	01415	F	2	HOLD	TACOMA	DO NOT BREED		
1416	01416	F	2	HOLD	TACOMA	DO NOT BREED		
1467	01467	M	1	HOLD	TACOMA	DO NOT BREED		
1468	01468	M	1	HOLD	TACOMA	DO NOT BREED		
1482	01482	M	1	HOLD	TACOMA	DO NOT BREED		
1483	01483	M	1	HOLD	TACOMA	DO NOT BREED		
1484	01484	M	1	HOLD	TACOMA	DO NOT BREED		
1485	01485	F	1	HOLD	TACOMA	DO NOT BREED		
1486	01486	F	1	HOLD	TACOMA	DO NOT BREED		
1487	01487	F	1	HOLD	TACOMA	DO NOT BREED		
1488	01488	F	1	HOLD	TACOMA	DO NOT BREED		
1489	01489	F	1	HOLD	TACOMA	DO NOT BREED		
1490	01490	M	1	HOLD	TACOMA	DO NOT BREED		
1491	01491	M	1	HOLD	TACOMA	DO NOT BREED		
1492	01492	F	1	HOLD	TACOMA	DO NOT BREED		
1495	01495	F	1	HOLD	TACOMA	DO NOT BREED		
1496	01496	F	1	HOLD	TACOMA	DO NOT BREED		
1601	01601	M	0	HOLD	TACOMA	DO NOT BREED		
1602	01602	F	0	HOLD	TACOMA	DO NOT BREED		
1603	01603	F	0	HOLD	TACOMA	DO NOT BREED		
1618	01618	F	0	HOLD	TACOMA	DO NOT BREED		
1619	01619	F	0	HOLD	TACOMA	DO NOT BREED		
1385	1385	F	2	RECEIVE FROM	WOLFHAVEN	BREED WITH	1381	

Summary:
Before transfers: 20 males, 30 females, 0 unknowns
After transfers: 21 males, 30 females, 0 unknowns

Addendum: 1224F not transferred to VICTOR TX (see FORTWORTH)
1405M not transferred to ASHEVILLE (see ASHEVILLE)

TALLAHASE

Tallahassee Mus. History & Natural Sc
Tallahassee, FL

Institutional contact/representative: Mike Jones (850) 575-8685 – pwpalmik@nettally.com

Transfer: **None**
Receive: **TBD (See FORTWORTH note re: 937f)**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
~~937~~		~~F~~	~~10~~	~~RECEIVE FROM~~	~~FORTWORTH~~	~~DO NOT BREED~~		excluded; companion pair w/ 1359. (See FORTWORTH note)
1359	05L009	M	3	HOLD	TALLAHASE	DO NOT BREED		companion pair w/ 937f (See above)
1376	05L002	F	2	HOLD	TALLAHASE	DO NOT BREED		
1377	05L003	F	2	HOLD	TALLAHASE	DO NOT BREED		
1378	05L004	F	2	HOLD	TALLAHASE	DO NOT BREED		

Summary:
Before transfers: 1 male, 3 females, 0 unknowns
After transfers: 1 male, 4 females, 0 unknowns

Addendum: **Not receiving 937f from FORTWORTH**
See CHEHAW 919F re: possible companion for 1359
Identify one of three female siblings for transfer to JACKSONVL

TREVOR

Trevor Zoo
Millbrook, NY

Institutional contact/representative: Jon Meigs (845) 677-3704 – trevorzoo@millbrook.org
Alan Tousignant (845) 677-3704 – atousignant@millbrook.org

Transfer: **1379M to SYRACUSE**
Receive: **1479F from BRIDGEPRT**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1479	101728	F	1	RECEIVE FROM	BRIDGEPRT	DO NOT BREED		companion pair w/ 1380M
1379	A5M678	M	2	SEND TO	SYRACUSE	DO NOT BREED		companion pair w/ 1398
1380	A5M679	M	2	HOLD	TREVOR	DO NOT BREED		Sterilize (PRA) companion pair w/ 1479

Summary:
Before transfers: 2 males, 0 females, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns

No Change

VA MUSEUM

Virginia Living Museum
Newport News, VA
Institutional contact/representative: George Mathews (757) 595-1900 x213 – george.mathews@valivingmuseum.org

Transfer: **1473F, 1598F, 1599F, 1600F to MANTEO**
1273M to MANTEO (Pending medical assessment)
TBD to SALISBURY

Receive: **None**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1126	1080	F	6	HOLD	VA MUSEUM	DO NOT BREED		
1273	1222	M	4	SEND TO	MANTEO	BREED WITH	1396	w/ 1396 from ASHEVILLE
1473	1231	F	1	SEND TO	MANTEO	DO NOT BREED		
1594	1264	M	0	HOLD	VA MUSEUM	DO NOT BREED		
1595	1265	M	0	HOLD	VA MUSEUM	DO NOT BREED		
1596	1266	M	0	HOLD	VA MUSEUM	DO NOT BREED		
1598	1268	F	0	SEND TO	MANTEO	DO NOT BREED		
1599	1269	F	0	SEND TO	MANTEO	DO NOT BREED		
1600	1270	F	0	SEND TO	MANTEO	DO NOT BREED		

Summary:
Before transfers: 4 males, 5 females, 0 unknowns
After transfers: 3 males, 1 female, 0 unknowns

Addendum: **1273M not transferred to MANTEO (medical)**
1126F transfer to SALISBURY

VICTOR TX

Texas Zoo
Victoria, TX
Institutional contact/representative: Eric Mebane (361) 573-7681 – animalcare@texaszoo.org

Transfer: ~~**1227F to FORTWORTH**~~ **- On Hold - TBD**

Receive: ~~**791M from WCSRC**~~
~~**1224F from TACOMA**~~ **- On Hold - TBD**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
~~1224~~	~~01224~~	~~F~~	~~5~~	~~RECEIVE FROM~~	~~TACOMA~~	~~BREED WITH~~	~~1092~~	
559		s	15	HOLD	VICTOR TX	DO NOT BREED		excluded; ~~w/ 791 from WCSRC~~
~~1092~~	~~200201~~	~~M~~	~~7~~	~~HOLD~~	~~VICTOR TX~~	~~BREED WITH~~	~~1224~~	
~~1227~~	~~200504~~	~~F~~	~~5~~	~~SEND TO~~	~~FORTWORTH~~	~~BREED WITH~~	~~956~~	
~~791~~		~~M~~	~~12~~	~~RECEIVE FROM~~	~~WCSRC~~	~~DO NOT BREED~~		~~excluded; w/ 559 for companion~~

Summary:
Before transfers: 1 male, 1 female, 0 unknowns, 1 sterile
After transfers: 2 males, 1 female, 0 unknowns, 1 sterile

Addendum: **All recommended transfers involving VICTOR TX will not occur given individual medical issues. Current pair will be maintained.**

WCSRC

Wild Canid Survival & Research Center

Eureka, MO

Institutional contact/representative: Sue Lindsey (636) 938-5900 – slindsey_wcc@onemain.com

Transfer: ~~**791M to VICTOR TX**~~
1464M to GREENBAY
918f, 1409F, 1410F to COAL VAL

Receive: **1587M, 1588M from CHICAGOLP (On hold)**
1604M, 1605M, 1606M from SPRINGFIE (On hold)

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
1587	21878	M	0	RECEIVE FROM	CHICAGOLP	DO NOT BREED		bachelor group (On Hold)
1588	21879	M	0	RECEIVE FROM	CHICAGOLP	DO NOT BREED		bachelor group (On Hold)
1604	902	M	0	RECEIVE FROM	SPRINGFIE	DO NOT BREED		bachelor group (On Hold)
1605	903	M	0	RECEIVE FROM	SPRINGFIE	DO NOT BREED		bachelor group (On Hold)
1606	904	M	0	RECEIVE FROM	SPRINGFIE	DO NOT BREED		bachelor group (On Hold)
~~791~~	~~200537~~	~~M~~	~~12~~	~~SEND TO~~	~~VICTOR TX~~	~~DO NOT BREED~~		~~excluded; w/ 559 for companion~~
819	20009	F	11	HOLD	WCSRC	DO NOT BREED		excluded
918	200414	s	10	SEND TO	COAL VAL	DO NOT BREED		excluded
1409	200535	F	2	SEND TO	COAL VAL	DO NOT BREED		
1410	200536	F	2	SEND TO	COAL VAL	DO NOT BREED		
1464	200603	M	1	SEND TO	GREENBAY	BREED WITH	1388	
1465	200604	F	1	HOLD	WCSRC	DO NOT BREED		
1593	200701	F	0	HOLD	WCSRC	DO NOT BREED		

Summary:
Before transfers: 2 males, 5 females, 0 unknowns, 1 sterile
After transfers: 5 males, 3 females, 0 unknowns

Addendum: **791M not being transferred to VICTOR TX (see VICTOR TX)**
Moves involving male bachelor group on hold due to space logistics

WHEELING

Oglebay's Good Children's Zoo
Wheeling, WV
Institutional contact/representative: Penny Miller (304) 243-4027 – pmiller@oglebay-resort.com

Transfer: **None - TBD**
Receive: **None - TBD**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
953	3425	M	9	HOLD	WHEELING	DO NOT BREED		valuable; consider re-pairing??
1021	3052	F	8	HOLD	WHEELING	DO NOT BREED		valuable; consider re-pairing??

Summary:
Before transfers: 1 male, 1 female, 0 unknowns
After transfers: 1 male, 1 female, 0 unknowns

Addendum: Both wolves need to be placed

WOLFHAVEN

Wolf Haven International
Tenino, WA
Institutional contact/representative: Wendy Spencer (360) 264-4695 – wendy@wolfhaven.org

Transfer: **1385F to TACOMA**
Receive: **Female - TBD from TACOMA**

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
688	688	M	13	HOLD	WOLFHAVEN	BREED WITH	1096	excluded due to age; low likelihood pair
1096	1096	F	7	HOLD	WOLFHAVEN	BREED WITH	688	low likelihood pair
1222	1222	s	5	HOLD	WOLFHAVEN	DO NOT BREED		excluded; Pair w/ Female from TACOMA
1385	1385	F	2	SEND TO	TACOMA	BREED WITH	1381	

Summary:
Before transfers: 1 male, 2 females, 0 unknowns, 1 sterile
After transfers: 1 male, 2 female, 0 unknowns, 1 sterile

Addendum: Received 1480F from TACOMA

WSC MN

Wildlife Science Center

Forest Lake, MN

Institutional contact/representative: Peggy Callahan (651) 464-3993 – peggy@wildlifesciencecenter.org

Transfer: **1122M to ASHEBORO**

Receive: **957M from SPRINGFIE**
1609M, 1610M, 1611M from BRIDGEPRT

ID	Local ID	Sex	Age	Disposition	Location	Breeding	With	Notes
957	853	M	9	RECEIVE FROM	SPRINGFIE	BREED WITH	1225	
1609	101820	M	0	RECEIVE FROM	BRIDGEPRT	DO NOT BREED		
1610	101823	M	0	RECEIVE FROM	BRIDGEPRT	DO NOT BREED		
1611	101824	M	0	RECEIVE FROM	BRIDGEPRT	DO NOT BREED		
1122	1122	M	6	SEND TO	ASHEBORO	BREED WITH	1366	
1225	1225	F	5	HOLD	WSC MN	BREED WITH	957	
1401	1401	M	2	HOLD	WSC MN	DO NOT BREED		
1402	1402	M	2	HOLD	WSC MN	DO NOT BREED		

Summary:
Before transfers: 3 males, 1 female, 0 unknowns
After transfers: 6 males, 1 female, 0 unknowns

Addendum: **No changes planned, although working to identify alternative location for BRIDGEPRT males if unable to complete recommended transfer.**

Appendix A
Summary of Data Exports Used to Prepare Breeding & Transfer Plan

Project: rwolf07
Report compiled under Population Management 2000, version 1.212
3:54:15 PM, 7/26/2007

Comments: created at SSP meeting in Chicago

Studbook information:
Data exported on: 26 Jul 2007 from Sparks v1.52
Data compiled by: William Waddell
Contact info: Point Defiance Zoo & Aquarium wwaddell@pdza.org/253-858-9172
Data current thru: 20 Jun 2007
Scope of data: International

Demographic data from: C:\sparks\rwolf07\mrwolf07.prn and C:\sparks\rwolf07\frwolf07.prn
Filter Conditions In Effect: Dates: Between 01/01/1980 and 25/07/2007 User Defined Fields: "C" $ upper(CAPFREE)

Genetic data from: C:\sparks\rwolf07\rwolf07.ped
Genetic filter conditions:
Dates: As of 25/07/2007 User Defined Fields: "C" $ upper(CAPFREE) Status: Living on 25 Jul 2007

Appendix B
List of Individuals Excluded from the Genetic Analyses
Age exclusions included females over 10 and males over 12 years old

SB#	Sex	Reason
513	F	Age
515	F	Age
543	M	Age
549	M	Age
557	F	Age
559	F	Sterile
619	M	Age
620	M	Age
622	F	Age
624	F	Sterile
632	M	Age
640	M	Age
645	M	Age
647	F	Age
648	F	Age
690	F	Age
692	F	Age
704	F	Age

SB#	Sex	Reason
720	F	Age
724	M	Age
725	F	Age
740	M	Age
842	M	Repro
917	M	Sterile
918	F	Sterile
937	F	Sterile
974	M	Repro
1222	M	Sterile
1292	M	Sterile
722	M	Age
744	F	Age
687	M	Age
688	M	Age
793	F	Age
819	F	Age
791	M	Behavior

Appendix C
Life Tables

Data from 1980 - 2007

Males

Age	Qx	Px	lx	Mx	Vx	Ex	Risk (Qx)	Risk (Mx)
0	0.380	0.620	1.000	0.000	1.235	6.727	391.500	253.400
1	0.140	0.860	0.620	0.050	1.827	8.046	231.600	211.900
2	0.080	0.920	0.533	0.320	2.110	7.937	184.800	176.500
3	0.060	0.940	0.491	0.470	2.029	7.462	166.500	161.900
4	0.050	0.950	0.461	0.420	1.738	6.839	151.100	147.400
5	0.090	0.910	0.438	0.270	1.493	6.275	137.700	134.400
6	0.060	0.940	0.399	0.320	1.394	5.707	124.400	120.600
7	0.130	0.870	0.375	0.290	1.249	5.195	115.700	107.500
8	0.080	0.920	0.326	0.300	1.131	4.697	101.700	96.900
9	0.130	0.870	0.300	0.270	0.978	4.126	92.100	86.700
10	0.140	0.860	0.261	0.340	0.862	3.612	76.900	72.100
11	0.140	0.860	0.224	0.310	0.639	3.037	63.900	59.200
12	0.260	0.740	0.193	0.130	0.431	2.532	53.100	46.800
13	0.280	0.720	0.143	0.200	0.434	2.095	35.700	30.200
14	0.500	0.500	0.103	0.170	0.393	1.743	20.100	14.700
15	0.590	0.410	0.051	0.500	0.500	1.582	6.800	5.100
16	0.500	0.500	0.021	0.000	0.000	1.333	2.000	1.200
17	1.000	0.000	0.011	0.000	0.000	1.000	1.000	0.600
18	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

r = 0.0523
lambda = 1.0537
T = 5.65
N = 73.50
N(at 20 yrs) = 209.28

Females

Age	Qx	Px	lx	Mx	Vx	Ex	Risk (Qx)	Risk (Mx)
0	0.400	0.600	1.000	0.010	1.250	6.967	420.700	282.400
1	0.100	0.900	0.600	0.100	1.823	8.375	240.400	225.200
2	0.040	0.960	0.540	0.220	1.944	7.944	202.100	195.700
3	0.060	0.940	0.518	0.360	1.901	7.308	184.800	177.300
4	0.070	0.930	0.487	0.420	1.726	6.745	166.200	160.500
5	0.060	0.940	0.453	0.460	1.463	6.146	146.500	142.100
6	0.070	0.930	0.426	0.340	1.124	5.503	133.300	127.600
7	0.080	0.920	0.396	0.260	0.887	4.867	124.900	120.500
8	0.110	0.890	0.364	0.290	0.726	4.270	113.200	106.600
9	0.140	0.860	0.324	0.310	0.521	3.733	102.300	94.800
10	0.180	0.820	0.279	0.180	0.263	3.248	84.500	76.300
11	0.250	0.750	0.229	0.110	0.110	2.851	68.800	59.800
12	0.260	0.740	0.172	0.000	0.000	2.482	49.200	44.300
13	0.290	0.710	0.127	0.000	0.000	2.038	31.400	26.400
14	0.390	0.610	0.090	0.000	0.000	1.553	17.900	13.700
15	0.770	0.230	0.055	0.000	0.000	1.187	7.800	4.600
16	1.000	0.000	0.013	0.000	0.000	1.000	1.000	0.100
17	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

r = 0.0464
lambda = 1.0475
T = 5.25
N = 98.50
N(at 20 yrs) = 249.29

Appendix D

Ordered Mean Kinship List

Note: This list is current to July 2007 and values are subject to change with any birth, death, import, export, inclusion, or exclusion.
Population Average MK = 0.105

	Males				Females			
Rank	Stbk#	MK	Age	Location	Stbk#	MK	Age	Location
1	780	0.0845	12	AWENDA	1225	0.0925	5	WSC MN
2	779	0.0858	12	LOWRY	1226	0.0925	5	BLOOMINGT
3	924	0.0917	10	SIOUX FAL	1227	0.0925	5	VICTOR TX
4	1097	0.0962	7	PROVIDNCE	1287	0.0932	4	PROVIDNCE
5	1369	0.0972	3	NYWOLF	1228	0.0939	5	TACOMA
6	1414	0.0979	2	BLOOMINGT	1291	0.0944	4	NYWOLF
7	1286	0.0980	4	TACOMA	1224	0.0946	5	TACOMA
8	1092	0.0983	7	VICTOR TX	1385	0.0961	2	WOLFHAVEN
9	957	0.0985	9	SPRINGFIE	958	0.0964	9	SIOUX FAL
10	1122	0.0996	6	WSC MN	1370	0.0972	3	AWENDA
11	1490	0.1002	1	TACOMA	1415	0.0979	2	TACOMA
12	1491	0.1002	1	TACOMA	1416	0.0979	2	TACOMA
13	956	0.1003	9	FORTWORTH	1563	0.0980	0	LOWRY
14	1460	0.1004	2	LOWRY	1564	0.0980	0	LOWRY
15	1381	0.1010	2	TACOMA	1382	0.0989	2	TACOMA
16	1386	0.1017	2	FRESNO	1495	0.0990	1	TACOMA
17	1387	0.1017	2	FRESNO	1496	0.0990	1	TACOMA
18	1020	0.1025	8	BREVARD	1010	0.0991	8	TACOMA
19	1464	0.1027	1	WCSRC	938	0.1000	10	TACOMA
20	939	0.1029	10	TACOMA	1492	0.1002	1	TACOMA
21	1095	0.1031	7	TACOMA	1366	0.1003	3	ASHEBORO
22	1121	0.1031	6	CHICAGOLP	1353	0.1006	3	CHICAGOLP
23	1601	0.1032	0	TACOMA	1096	0.1009	7	WOLFHAVEN
24	1587	0.1033	0	CHICAGOLP	1618	0.1009	0	TACOMA
25	1588	0.1033	0	CHICAGOLP	1619	0.1009	0	TACOMA
26	1277	0.1035	4	TACOMA	983	0.1014	9	ASHEVILLE
27	1278	0.1035	4	TACOMA	1009	0.1015	8	TACOMA
28	1279	0.1035	4	TACOMA	1388	0.1017	2	TACOMA
29	1405	0.1035	2	TACOMA	1364	0.1027	3	TACOMA
30	1467	0.1035	1	TACOMA	1465	0.1027	1	WCSRC
31	1468	0.1035	1	TACOMA	1593	0.1027	0	WCSRC
32	953	0.1038	9	WHEELING	1129	0.1028	6	JACKSON
33	1482	0.1041	1	TACOMA	1602	0.1032	0	TACOMA
34	1483	0.1041	1	TACOMA	1603	0.1032	0	TACOMA
35	1484	0.1041	1	TACOMA	1589	0.1033	0	CHICAGOLP
36	1408	0.1050	2	KNOXVILLE	1590	0.1033	0	CHICAGOLP
37	1284	0.1052	4	TACOMA	1591	0.1033	0	CHICAGOLP
38	1394	0.1056	2	ASHEVILLE	1280	0.1035	4	TACOMA
39	1395	0.1056	2	ASHEVILLE	1281	0.1035	4	TACOMA
40	816	0.1058	11	SALIS NC	1406	0.1035	2	TACOMA
41	1400	0.1059	2	MANTEO	1407	0.1035	2	TACOMA
42	1401	0.1059	2	WSC MN	1485	0.1041	1	TACOMA
43	1402	0.1059	2	WSC MN	1486	0.1041	1	TACOMA
44	1604	0.1062	0	SPRINGFIE	1487	0.1041	1	TACOMA
45	1605	0.1062	0	SPRINGFIE	1488	0.1041	1	TACOMA
46	1606	0.1062	0	SPRINGFIE	1489	0.1041	1	TACOMA
47	1359	0.1067	3	TALLAHASE	1409	0.1050	2	WCSRC
48	1091	0.1070	7	FOSSILRIM	1410	0.1050	2	WCSRC
49	1379	0.1072	2	TREVOR	1021	0.1054	8	WHEELING
50	1380	0.1072	2	TREVOR	1396	0.1056	2	ASHEVILLE
51	1201	0.1077	5	GOLDENPND	1397	0.1056	2	ASHEBORO
52	1194	0.1078	5	ASHEBORO	1398	0.1056	2	SYRACUSE

	Males				Females			
Rank	Stbk#	MK	Age	Location	Stbk#	MK	Age	Location
53	1580	0.1079	0	FOSSILRIM	1403	0.1059	2	MANTEO
54	1581	0.1079	0	FOSSILRIM	1404	0.1059	2	MANTEO
55	1609	0.1084	0	BRIDGEPRT	1363	0.1060	3	FOSSILRIM
56	1610	0.1084	0	BRIDGEPRT	1276	0.1062	4	MANTEO
57	1611	0.1084	0	BRIDGEPRT	1607	0.1062	0	SPRINGFIE
58	1125	0.1088	6	JACKSONVL	1608	0.1062	0	SPRINGFIE
59	1594	0.1107	0	VA MUSEUM	1574	0.1064	0	BREVARD
60	1595	0.1107	0	VA MUSEUM	1360	0.1067	3	KNOXVILLE
61	1596	0.1107	0	VA MUSEUM	1123	0.1074	6	TACOMA
62	1273	0.1109	4	VA MUSEUM	1361	0.1074	3	BREVARD
63	1200	0.1111	5	CHATT NAT	1274	0.1075	4	LOWRY
64	932	0.1113	10	ALEXANDRI	1126	0.1077	6	VA MUSEUM
65	1389	0.1114	2	DURHAM MS	1196	0.1078	5	OKLAHOMA
66	1390	0.1114	2	DURHAM MS	1480	0.1079	1	FOSSILRIM
67	1391	0.1114	2	DURHAM MS	1582	0.1079	0	FOSSILRIM
68	1565	0.1117	0	CHATT NAT	1583	0.1079	0	FOSSILRIM
69	1566	0.1117	0	CHATT NAT	1584	0.1079	0	FOSSILRIM
70	1567	0.1117	0	CHATT NAT	1585	0.1079	0	FOSSILRIM
71	1375	0.1139	2	LOWRY	1586	0.1079	0	FOSSILRIM
72					1479	0.1084	1	BRIDGEPRT
73					1612	0.1084	0	BRIDGEPRT
74					1613	0.1084	0	BRIDGEPRT
75					1614	0.1084	0	BRIDGEPRT
76					1615	0.1084	0	BRIDGEPRT
77					1127	0.1085	6	BRIDGEPRT
78					1275	0.1095	4	CHATT NAT
79					1575	0.1096	0	SALIS NC
80					1576	0.1096	0	SALIS NC
81					1195	0.1105	5	SALIS NC
82					1473	0.1107	1	VA MUSEUM
83					1598	0.1107	0	VA MUSEUM
84					1599	0.1107	0	VA MUSEUM
85					1600	0.1107	0	VA MUSEUM
86					1204	0.1111	5	SPRINGFIE
87					1197	0.1112	5	ASHEBORO
88					1392	0.1114	2	ASHEBORO
89					1393	0.1114	2	ASHEBORO
90					1568	0.1117	0	CHATT NAT
91					1569	0.1117	0	CHATT NAT
92					919	0.1120	10	CHEHAW
93					1203	0.1138	5	ALEXANDRI
94					1376	0.1139	2	TALLAHASE
95					1377	0.1139	2	TALLAHASE
96					1378	0.1139	2	TALLAHASE

Ordered Mean Kinships for Unknown sex animals

Rank	Stbk#	MK	Known	Age	Location
1	1651	0.1139	100.0	0	ALEXANDRI
2	1652	0.1139	100.0	0	ALEXANDRI
3	1653	0.1139	100.0	0	ALEXANDRI
4	1654	0.1139	100.0	0	ALEXANDRI
5	1655	0.1139	100.0	0	ALEXANDRI

Appendix E
Definitions

Management Terms

SSP Master Plan – A document that provides complete breeding and transfer recommendations for a Species Survival Plan (SSP®) population. The document is based on genetic and demographic analyses with consideration of behavioral, social, and institutional wants and needs. A draft of the Master Plan must be published in the Members Only section of the AZA Web site for a 30-day comment period. After the Coordinator incorporates/responds to institutional comments, a final version of the Master Plan must be published in the Members Only section of the AZA Web site. SSP Participation by AZA institutions is required.

Full Participation – AZA policy stating that all AZA accredited institutions and certified related facilities having an SSP animal in their collection are required to participate in the SSP partnership process and abide by the recommendations of the SSP.

Population Management Plan (PMP)– A document that provides complete breeding and transfer recommendations for a PMP population. The document is based on genetic and demographic analyses with consideration of behavioral, social, and institutional wants and needs. A draft of the PMP must be published in the Members Only section of the AZA Web site for a 30-day comment period. After the PMP Manager incorporates/responds to institutional comments, a final version of the PMP must be published in the Members Only section of the AZA Web site. PMP Participation by AZA institutions is voluntary.

Demographic Terms

Age Distribution – A two-way classification showing the numbers or percentages of individuals in various age and sex classes.

Ex, Life Expectancy – Average years of further life for an animal in age class x.

Lambda (λ) or Population Growth Rate – The proportional change in population size from one year to the next. Lambda can be based on life-table calculations (the expected lambda) or from observed changes in population size from year to year. A lambda of 1.11 means a 11% per year increase; lambda of .97 means a 3% decline in size per year.

lx, Age-Specific Survivorship – The probability that a new individual (e.g., age 0) is alive at the *beginning* of age *x*. Alternatively, the proportion of individuals which survive from birth to the beginning of a specific age class.

Mx, **Fecundity** – The average number of same-sexed young born to animals in that age class. Because SPARKS is typically using relatively small sample sizes, SPARKS calculates Mx as 1/2 the average number of young born to animals in that age class. This provides a somewhat less "noisy" estimate of Mx, though it does not allow for unusual sex ratios. The fecundity rates provide information on the age of first, last, and maximum reproduction.

Px, Age-Specific Survival – The probability that an individual of age *x* survives one time period; is conditional on an individual being alive at the beginning of the time period. Alternatively, the proportion of individuals which survive from the beginning of one age class to the next.

Qx, Mortality – Probability that an individual of age *x* dies during time period. Qx = 1-Px

Risk (Qx or Mx) – The number of individuals that have lived during an age class. The number at risk is used to calculate Mx and Qx by dividing the number of births and deaths that occurred during an age class by the number of animals at risk of dying and reproducing during that age class.
The proportion of individuals that die during an age class. It is calculated from the number of animals that die during an age class divided by the number of animals that were alive at the beginning of the age class (i.e.-"at risk").

Vx, **Reproductive Value** – The expected number of offspring produced this year and in future years by an animal of age x.

Genetic Terms

Allele Retention – The probability that a gene present in a founder individual exists in the living, descendant population.

Current Gene Diversity (GD) -- The proportional gene diversity (as a proportion of the source population) is the probability that two alleles from the same locus sampled at random from the population will not be identical by descent. Gene diversity is calculated from allele frequencies, and is the heterozygosity expected in progeny produced by random mating, and if the population were in Hardy-Weinberg equilibrium.

Effective Population Size (Inbreeding N_e) -- The size of a randomly mating population of constant size with equal sex ratio and a Poisson distribution of family sizes that would (a) result in the same mean rate of inbreeding as that observed in the population, or (b) would result in the same rate of random change in gene frequencies (genetic drift) as observed in the population. These two definitions are identical only if the population is demographically stable (because the rate of inbreeding depends on the distribution of alleles in the parental generation, whereas the rate of gene frequency drift is measured in the current generation).

FOKE, First Order Kin Equivalents – The number of first-order kin (siblings or offspring) that would contain the number of copies of an individuals alleles (identical by descent) as are present in the captive-born population. Thus an offspring or sib contributes 1 to FOKE; each grand-offspring contributes 1/2 to FOKE; each cousin contributes 1/4 to FOKE. FOKE = 4*N*MK, in which N is the number of living animals in the captive population.

Founder – An individual obtained from a source population (often the wild) that has no known relationship to any individuals in the derived population (except for its own descendants).

Founder Contribution -- Number of copies of a founder's genome that are present in the living descendants. Each offspring contributes 0.5, each grand-offspring contributes 0.25, etc.

Founder Genome Equivalents (FGE) – The number wild-caught individuals (founders) that would produce the same amount of gene diversity as does the population under study. The gene diversity of a population is 1 - 1 / (2 * FGE).

Founder Genome Surviving – The sum of allelic retentions of the individual founders (i.e., the product of the mean allelic retention and the number of founders).

Founder Representation -- Proportion of the genes in the living, descendant population that are derived from that founder. I.e., proportional Founder Contribution.

GU, Genome Uniqueness – Probability that an allele sampled at random from an individual is not present, identical by descent, in any other living individual in the population. GU-all is the genome uniqueness relative to the entire population. GU-Desc is the genome uniqueness relative to the living non-founder, descendants.

Inbreeding Coefficient (F) -- Probability that the two alleles at a genetic locus are identical by descent from an ancestor common to both parents. The mean inbreeding coefficient of a population will be the proportional decrease in observed heterozygosity relative to the expected heterozygosity of the founder population.

Kinship Value (KV) – The weighted mean kinship of an animal, with the weights being the reproductive values of each of the kin. The mean kinship value of a population predicts the loss of gene diversity expected in the subsequent generation if all animals were to mate randomly and all were to produce the numbers of offspring expected for animals of their age.

Mean Generation Time (T) – The average time elapsing from reproduction in one generation to the time the next generation reproduces. Also, the average age at which a female (or male) produces offspring. It is not the age of first reproduction. Males and females often have different generation times.

Mean Kinship (MK) – The mean kinship coefficient between an animal and all animals (including itself) in the living, captive-born population. The mean kinship of a population is equal to the proportional loss of gene diversity of the descendant (captive-born) population relative to the founders and is also the mean inbreeding coefficient of progeny produced by random mating. Mean kinship is also the reciprocal of two times the founder genome equivalents: MK = 1 / (2 * FGE). MK = 1 - GD.

Percent Known – Percent of an animal's genome that is traceable to known Founders. Thus, if an animal has an UNK sire, the % Known = 50. If it has an UNK grandparent, % Known = 75.

Prob Lost – Probability that a random allele from the individual will be lost from the population in the next generation, because neither this individual nor any of its relatives pass on the allele to an offspring. Assumes that each individual will produce a number of future offspring equal to its reproductive value, Vx.

Appendix F
List of Institutional Representatives

Contact Name (IR)	Institution	Email	Phone
Leslie Whitt	ALEXANDRI - Alexandria Zoological Park, Alexandria, LA	les.whitt@cityofalex.com	318-473-1385
Lorraine Smith	ASHEBORO - North Carolina Zoological Park, Asheboro, NC	lorraine.smith@nczoo.org	336-879-7603
Henry Bulluck	ASHEVILLE - Western NC Nature Center, Asheville, NC	hbulluck@ashevillenc.gov	828-298-5600 (x311)
Sarah Dawsey	AWENDA - Cape Romain NWR, Awenda, SC	sarah_dawsey@fws.gov	843-928-3264
John Tobias	BLOOMINGT - Miller Park Zoo, Bloomington, IL	jtobias@cityblm.org	309-434-2825
Michelle Smurl	BREVARD - Brevard Zoo, Melbourne, FL	msmurl@brevardzoo.org	321-254-9453 (x217)
Don Goff	BRIDGEPRT - Connecticut's Beardsley Zoo, Bridgeport, CT	dgoff@beardsleyzoo.org	203-394-6564
Tish Gailmard	CHATT NAT - Chattanooga Nature Center, Chattanooga, TN	tgailmard@chattanature.org	423-821-1160 (x103)
Jan Thompson	CHEHAW - Chehaw Wild Animal Park, Albany, GA	jthompson@parksatchehaw.org	229-430-5275
Diane Mulkerin	CHICAGOLP - Lincoln Park Zoological Gardens, Chicago, IL	dmulkerin@lpzoo.org	312-742-2376
Tom Stalf	COAL VAL – Niabi Zoo, Coal Valley, IL	tstalf@niabizoo.com	309-799-3482
Sherry Samuels	DURHAM MS - North Carolina Museum of Life & Science, Durham, NC	sherry.samuels@ncmls.org	919-220-5429 (x333)
John Ward	FORTWORTH - Fort Worth Zoological Park, Ft Worth, TX	jward@fortworthzoo.org	817-759-7196
Mary Jo Sterns	FOSSILRIM - Fossil Rim Wildlife Center, Glen Rose, TX	maryjos@fossilrim.org	254-897-2960 (x314)
Andy Snider	FRESNO - Chaffee Zoological Gardens of Fresno, Fresno, CA	asnider@fresnochaffeezoo.com	559-498-5910
Darrin Samborski	GOLDENPND - Land Between the Lakes, Golden Pond, KY	dsamborski@fs.fed.us	270-924-2050
Carmen Murach	GREENBAY - NEW Zoo, Green Bay, WI	Murach_CD@co.brown.wi.us	920-434-8597
Dave Wetzel	JACKSON - Jackson Zoological Park, Jackson, MS	dlwetzel@msn.com	601-352-2590
Craig Miller	JACKSONVL - Jacksonville Zoo and Gardens, Jacksonville, FL	millerc@jaxzoo.org	904-757-4463 (x136)
Lisa New	KNOXVILLE - Knoxville Zoological Gardens, Knoxville, TN	lnew@knoxville-zoo.org	865-637-5331 (x329)
LeeAnn Rottman	LOWRY - Tampa's Lowry Park Zoo, Tampa, FL	curator@lowryparkzoo.com	813-935-8552 (x221)
Art Beyer	MANTEO - Alligator River NWR, Manteo, NC	Arthur_beyer@fws.gov	252-473-1131 (x241)
David Orndorff	MILL MOUN – Mill Mountain Zoo, Roanoke, VA	dorndorff@mmzoo.org	540-343-3241 (X31)
Michael Stoskopf	NCS RAL - North Carolina State University, Raleigh, NC	mkstosko@unity.ncsu.edu	919-513-6279

Contact Name (IR)	Institution	Email	Phone
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Jonathan Reding	OKLAHOMA - Oklahoma City Zoological Park, Oklahoma City, OK	jreding@okczoo.com	405-425-0225
Beeca Keene	PROVIDNCE - Roger Williams Park Zoo, Providence, RI	bkeene@rwpzoo.org	410-785-3510
Bob Pendergrass	SALIS NC - Dan Nicholas Nature Center, Salisbury, NC	bobpend@co.rowan.nc.us	704-216-7819
Ann Konopik	SALISBURY - Salisbury Zoological Park, Salisbury, MD	akonopik@ci.salisbury.md.us	410-548-3116
Jay Tetzloff	SIOUX FAL - Great Plains Zoo, Sioux Falls, SD	jtetzloff@gpzoo.org	605-367-7003
Talon Thornton	SPRINGFIE - Henson Robinson Zoo, Springfield, IL	tthornton@hensonrobinsonzoo.org	217-753-6217
Thom Lewis	ST.VINCE - St. Vincent Island NWR, Apalachicola, FL	thom_lewis@fws.gov	850-653-8808
Tom Labarge	SYRACUSE - Rosamond Gifford Zoo at Burnet Park, Syracuse, NY	markhor_3@hotmail.com	315-435-8511 (x122)
Will Waddell	TACOMA - Point Defiance Zoo & Aquarium, Tacoma, WA	wwaddell@pdza.org	253-858-9172
Mike Jones	TALLAHASE - Tallahassee Museum of Natural History, Tallahassee, FL	pwpalmik@nettally.com	850-575-8685
Jon Meigs	TREVOR - Trevor Zoo, Millbrook, NY	trevorzoo@millbrook.org	845-677-3704
George Mathews	VA MUSEUM - Virginia Living Museum, Newport News, VA	george.mathews@valivingmuseum.org	757-595-1900 (x213)
Angie Killough	VICTOR TX - Texas Zoo, Victoria, TX	animalcare@texaszoo.org	361-573-7681
Sue Lindsey	WCSRC - Wild Canid Survival & Rescue Center, Eureka, MO	slindsey_wcc@onemain.com	636-938-5900
Penny Miller	WHEELING - Oglebay's Good Children's Zoo, Wheeling, WV	pmiller@oglebay-resort.com	304-243-4027
Wendy Spencer	WOLFHAVEN - Wolf Haven International, Tenino, WA	wendy@wolfhaven.org	360-264-4695
Peggy Callahan	WSC MN - Wildlife Science Center, Forest Lake, MN	peggy@wildlifesciencecenter.org	651-464-3993