

Summary of Genetic Analysis

The early years of the Red Wolf SSP/Recovery Plan focused on increasing the captive red wolf population quickly to prevent excessive loss of genetic variation, particularly founder alleles. Table 1 lists the founders of the red wolf population and their capture sites.

The captive space available for red wolves is nearly full, and population growth was greatly slowed in the 1993 Master Plan (Figure 1). As a result, only 23 surviving captive births have been recorded since 1993. Age pyramids for the combined captive and free ranging populations, the captive alone, and the free ranging population alone are presented in Tables 2, 3, and 4. Table 5 presents the life tables for the combined population. The slowing of the population's growth makes it more difficult to equalize family sizes, and therefore, increase the Founder Genome Equivalent for the population. Breeding must resume if under-represented founder lines are to be adequately represented in the population. Also, the slowing of population growth could create a problem by de-stabilizing the population's demographic structure. Breeding recommendations in the 1997/98 Master Plan aim to increase the representation of currently under-represented founder lines.

The original strategy for supplying animals for release into the wild was to release animals from the most represented lines in the captive population. As a result the genetic diversity of the free ranging population has been kept low in relation to the total population, while the captive population has been protected by removal of over-represented animals for release. Genetic analyses were performed for the captive population, the free ranging population and the combined captive and free ranging populations to compare the founder retention and genetic diversity of each of the populations. The captive population has retained 90.5% of its original genetic diversity, while the free ranging population has 87.5% retention. Table 6 gives a genetic summary of the combined captive and free ranging populations, Table 7 is a summary of the of the captive population, and Table 8 summarizes the free ranging population. The representation of each founder in the captive and free ranging populations is illustrated in Figure 2. The figure shows that the distribution of living descendants between the two populations is not equal, and that two founder lines are not represented at all in the free ranging population. The figure also shows the inequality in family sizes. To help raise the genetic heterozygosity of the free ranging population, pairs from under-represented founders were identified to supply offspring for acclimation and release into the wild.

The strategy used to choose pairs for breeding was to pair animals according to their Mean Kinship (MK), and animals with the lowest MK on the ordered list were given the highest priority for breeding. The captive and free ranging populations were combined to assess MK to insure that under-represented lines in the free ranging population would be given appropriate ranking for the goal of increasing genetic diversity in the wild. Wolves with unknown parentage were not included in the analysis. A number of animals collected for the original stock were determined to be hybrids and were removed from the population, they therefore, have no surviving offspring in the current population. All analysis were preformed on a dataset with the hybrids removed.

TABLE 1

RED WOLF FOUNDERS

| <u>Sex</u> | <u>SB#</u> | <u>Capture Location</u> |
|------------|------------|-------------------------|
| M | 6 | Jefferson County, TX |
| M | 8 | Chambers County, TX |
| M | 11 | Cameron Parish, LA |
| F | 12 | Jefferson County, TX |
| F | 13 | Jefferson County, TX |
| F | 14 | Jefferson County, TX |
| F | 16 | Jefferson County, TX |
| M | 17 | Cameron Parish, LA |
| M | 24 | Cameron Parish, LA |
| M | 26 | Calcasieu Parish, LA |
| F | 30 | Cameron Parish, LA |
| M | 33 | Jefferson County, TX |
| M | 34 | Jefferson County, TX |
| M | 42 | Cameron Parish, LA |

FIGURE 1

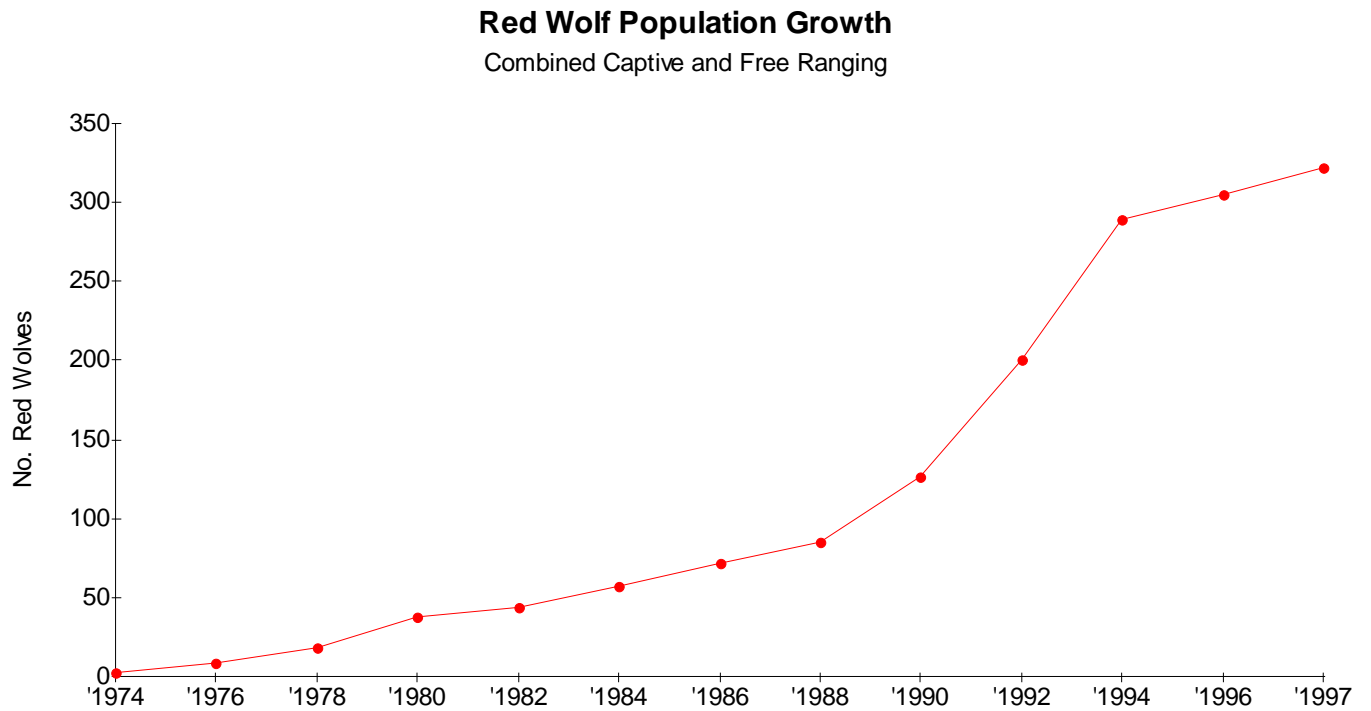


TABLE 2

RED WOLF -Age Pyramid Report - CAPTIVE and FREE RANGING POPULATION COMBINED

Living by 25 Sep 1997

Taxon Name: CANIS RUFUS GREGORYI

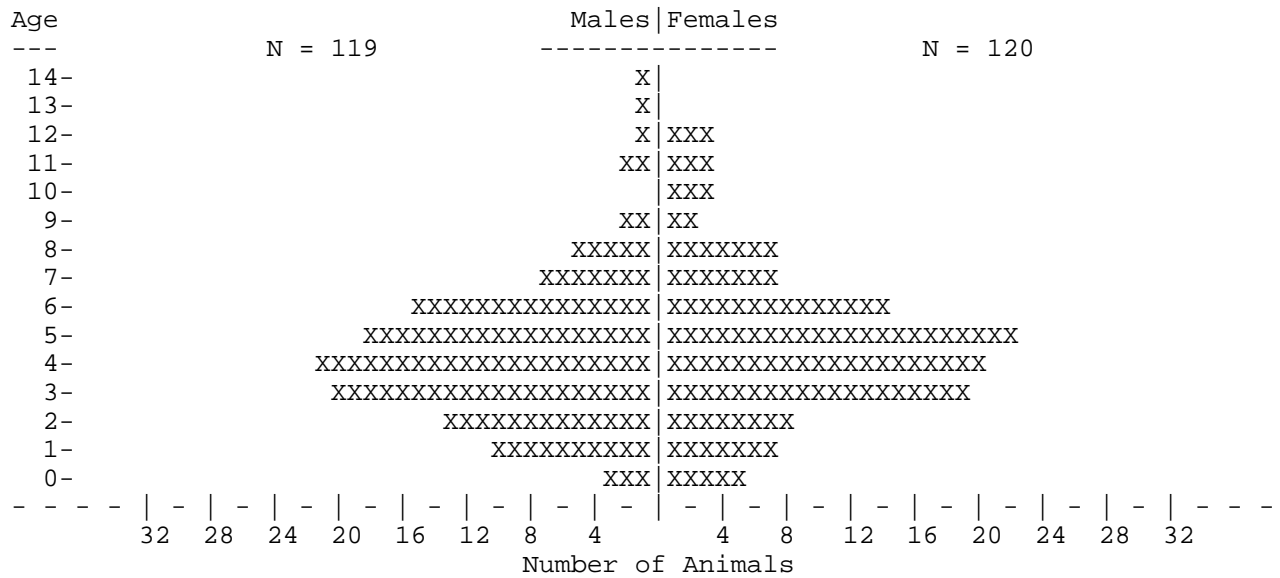
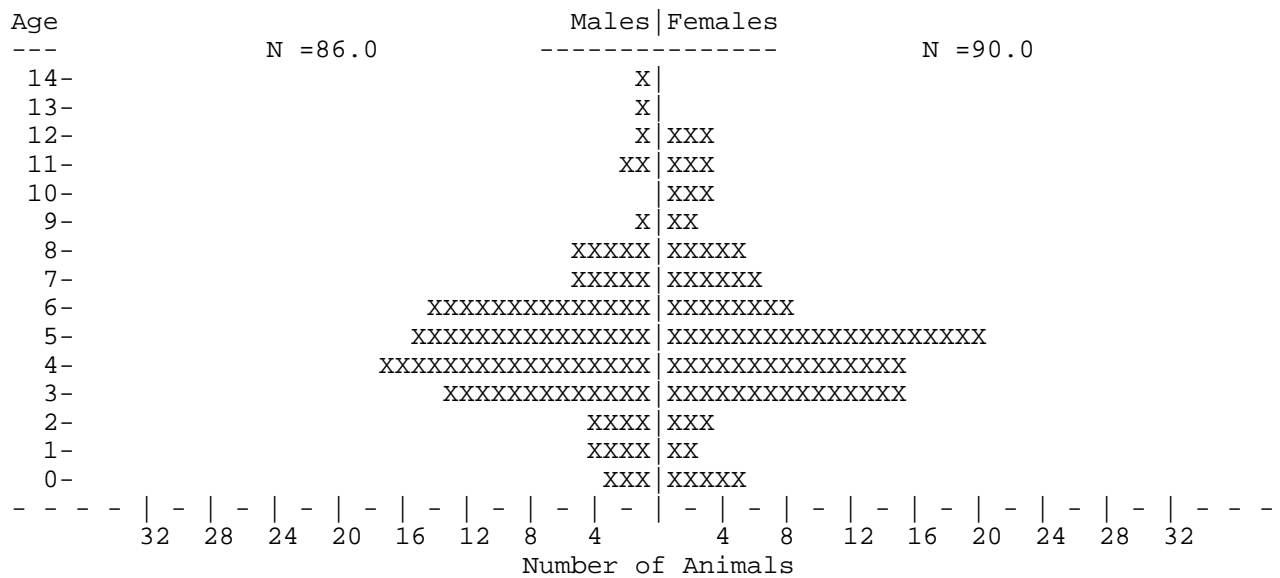


TABLE 3

RED WOLF - Age Pyramid Report - CAPTIVE POPULATION

Living by 25 Sep 1997

Taxon Name: CANIS RUFUS GREGORYI



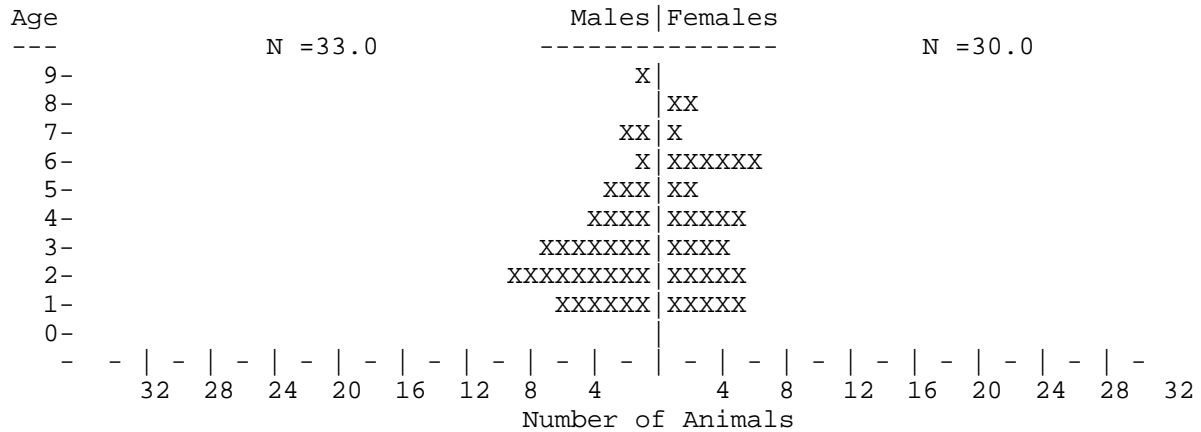
The age pyramid shows that the population is not stable due to the low number of births in the last three years. Breeding recommendations have been increased for 1998 to increase the number of animals in the youngest age class.

TABLE 4

RED WOLF - Age Pyramid Report - FREE RANGING POPULATION

Living by 25 Sep 1997

=====
 Taxon Name: CANIS RUFUS GREGORYI
 =====



Only animals that have been radio collared and being actively monitored are included in the age pyramid. Other wolves very likely exist, and the picture of the population presented here represents the most conservative estimate of the population. No pups from 1998 have yet been collared, so none are as yet recorded in the 0 age class. As these pups are collared and tracked they will be added to the population.

TABLE 5

Life Tables for the Combined Captive and Free Ranging Populations

LIFE TABLE for **Male** CANIS RUFUS GREGORYI

| Age | -----ACTUAL----- | | | -----At Risk----- | | -----SMOOTHED DATA----- | | |
|-----|------------------|-------|-------|-------------------|-------|-------------------------|-------|-------|
| | p(x) | l(x) | m(x) | q(x) | m(x) | p(x) | l(x) | m(x) |
| 0 | 0.690 | 1.000 | 0.000 | 384.2 | 258.7 | 0.690 | 1.000 | 0.000 |
| 1 | 0.910 | 0.690 | 0.060 | 236.8 | 214.4 | 0.908 | 0.690 | 0.110 |
| 2 | 0.940 | 0.628 | 0.320 | 195.7 | 183.0 | 0.918 | 0.626 | 0.310 |
| 3 | 0.920 | 0.590 | 0.570 | 168.3 | 153.3 | 0.920 | 0.575 | 0.485 |
| 4 | 0.910 | 0.543 | 0.540 | 127.0 | 116.9 | 0.918 | 0.529 | 0.540 |
| 5 | 0.920 | 0.494 | 0.440 | 92.0 | 86.5 | 0.910 | 0.485 | 0.540 |
| 6 | 0.890 | 0.455 | 0.610 | 66.2 | 60.7 | 0.900 | 0.441 | 0.558 |
| 7 | 0.900 | 0.405 | 0.520 | 48.0 | 43.5 | 0.878 | 0.397 | 0.608 |
| 8 | 0.830 | 0.364 | 0.670 | 35.2 | 31.4 | 0.843 | 0.349 | 0.655 |
| 9 | 0.820 | 0.302 | 0.690 | 28.3 | 24.3 | 0.823 | 0.294 | 0.638 |
| 10 | 0.720 | 0.248 | 0.540 | 21.5 | 17.5 | 0.820 | 0.242 | 0.573 |
| 11 | 0.920 | 0.178 | 0.460 | 12.8 | 12.6 | 0.820 | 0.198 | 0.550 |
| 12 | 0.520 | 0.164 | 0.580 | 10.4 | 8.2 | 0.795 | 0.162 | 0.688 |
| 13 | 1.000 | 0.085 | 1.070 | 4.4 | 4.4 | 0.743 | 0.129 | 0.933 |
| 14 | 0.710 | 0.085 | 1.050 | 3.4 | 2.5 | 0.713 | 0.096 | 1.050 |
| 15 | 1.000 | 0.061 | 1.310 | 2.0 | 2.0 | 0.658 | 0.068 | 0.788 |
| 16 | 0.500 | 0.061 | 0.000 | 2.0 | 1.2 | 0.553 | 0.045 | 0.263 |
| 17 | 0.000 | 0.030 | 0.000 | 1.0 | 0.6 | 0.625 | 0.025 | 0.000 |
| 18 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 0.875 | 0.016 | 0.000 |
| 19 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 1.000 | 0.014 | 0.000 |
| 20 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 1.000 | 0.014 | 0.000 |

LIFE TABLE for **Female** CANIS RUFUS GREGORYI

| Age | -----ACTUAL----- | | | -----At Risk----- | | -----SMOOTHED DATA----- | | |
|-----|------------------|-------|-------|-------------------|-------|-------------------------|-------|-------|
| | p(x) | l(x) | m(x) | q(x) | m(x) | p(x) | l(x) | m(x) |
| 0 | 0.650 | 1.000 | 0.010 | 407.1 | 276.0 | 0.650 | 1.000 | 0.010 |
| 1 | 0.920 | 0.650 | 0.100 | 237.4 | 218.4 | 0.918 | 0.650 | 0.123 |
| 2 | 0.940 | 0.598 | 0.280 | 200.2 | 186.9 | 0.930 | 0.596 | 0.280 |
| 3 | 0.930 | 0.562 | 0.460 | 168.5 | 156.4 | 0.938 | 0.555 | 0.425 |
| 4 | 0.940 | 0.523 | 0.590 | 137.6 | 126.8 | 0.940 | 0.520 | 0.490 |
| 5 | 0.940 | 0.491 | 0.500 | 104.8 | 95.9 | 0.930 | 0.489 | 0.500 |
| 6 | 0.900 | 0.462 | 0.430 | 79.2 | 71.2 | 0.910 | 0.455 | 0.500 |
| 7 | 0.850 | 0.416 | 0.620 | 60.0 | 55.0 | 0.895 | 0.414 | 0.495 |
| 8 | 0.910 | 0.353 | 0.480 | 44.7 | 40.4 | 0.885 | 0.370 | 0.485 |
| 9 | 0.880 | 0.322 | 0.560 | 33.5 | 31.5 | 0.865 | 0.328 | 0.448 |
| 10 | 0.820 | 0.283 | 0.350 | 27.1 | 23.0 | 0.795 | 0.283 | 0.345 |
| 11 | 0.660 | 0.232 | 0.200 | 17.5 | 15.4 | 0.660 | 0.225 | 0.188 |
| 12 | 0.390 | 0.153 | 0.000 | 8.2 | 6.3 | 0.540 | 0.149 | 0.050 |
| 13 | 0.500 | 0.060 | 0.000 | 2.0 | 1.1 | 0.500 | 0.080 | 0.000 |
| 14 | 1.000 | 0.030 | 0.000 | 1.0 | 1.0 | 0.625 | 0.040 | 0.000 |
| 15 | 0.000 | 0.030 | 0.000 | 1.0 | 0.4 | 0.875 | 0.025 | 0.000 |
| 16 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 1.000 | 0.022 | 0.000 |
| 17 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 1.000 | 0.022 | 0.000 |
| 18 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 1.000 | 0.022 | 0.000 |
| 19 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 1.000 | 0.022 | 0.000 |
| 20 | 1.000 | 0.000 | 0.000 | 0.0 | 0.0 | 1.000 | 0.022 | 0.000 |

These tables show that mortality is greatest in the 0-1 age class for both males and females, but once a pup reaches one year old, it has a very good chance of survival until at least 11 years old.

TABLE 6**FOUNDER analysis for Red wolf - CAPTIVE and FREE RANGING POPULATIONS COMBINED**

Analysis date: 24/09/97

| | | | | | | | |
|------------------------------|---------|---------|---------|---------|---------|---------|--------|
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 17 | 24 | 26 | 33 | 34 | 42 | |
| Founder contributions | | | | | | | |
| | 53.3453 | 37.4211 | 19.0625 | 46.5326 | 36.6542 | 15.6800 | 7.5807 |
| | 0.2500 | 38.2825 | 15.2231 | 13.7577 | 13.7971 | 1.5942 | |
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 17 | 24 | 26 | 33 | 34 | 42 | |
| Fractional contributions | | | | | | | |
| | 0.1783 | 0.1251 | 0.0637 | 0.1555 | 0.1225 | 0.0524 | 0.0253 |
| | 0.0008 | 0.1280 | 0.0509 | 0.0460 | 0.0461 | 0.0053 | |
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 17 | 24 | 26 | 33 | 34 | 42 | |
| Number of living descendants | | | | | | | |
| | 311 | 283 | 125 | 311 | 298 | 257 | 107 |
| | 1 | 260 | 185 | 251 | 106 | 28 | |

Genetic Summary - Captive and Free ranging Populations Combined

| GENETIC SUMMARY | LIVING DESCENDANT POPULATION | POTENTIAL |
|---|------------------------------|-----------|
| Number of founders: | 13 | 13 |
| Mean retention: | 0.698 | 0.698 |
| Founder genomes surviving: | 9.073 | 9.073 |
| Founder Genome Equivalents: | 5.209 | 9.073 |
| Fraction source gene diversity retained: | 0.904 | 0.945 |
| Fraction wild source gene diversity lost: | 0.096 | 0.055 |
| Mean inbreeding coefficient: | 0.061 | |

Table 7

FOUNDER analysis for CAPTIVE REDWOLF POPULATION Analysis date: 24/09/97

Living by 24 Sep 1997

Founder calculations omit UNKNOWNs.

| | | | | | | | |
|------------------------------|---------|---------|---------|---------|---------|---------|--------|
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 17 | 24 | 26 | 33 | 34 | 42 | |
| Founder contributions | | | | | | | |
| | 27.4725 | 23.5503 | 10.5000 | 24.7225 | 22.1593 | 10.4730 | 4.1423 |
| | 0.2500 | 26.2506 | 6.8140 | 8.9103 | 9.1875 | 1.5942 | |
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 17 | 24 | 26 | 33 | 34 | 42 | |
| Fractional contributions | | | | | | | |
| | 0.1561 | 0.1338 | 0.0597 | 0.1404 | 0.1259 | 0.0595 | 0.0235 |
| | 0.0014 | 0.1491 | 0.0387 | 0.0506 | 0.0522 | 0.0091 | |
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 17 | 24 | 26 | 33 | 34 | 42 | |
| Number of living descendants | | | | | | | |
| | 172 | 169 | 55 | 172 | 160 | 149 | 60 |
| | 1 | 151 | 75 | 148 | 51 | 28 | |

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Genetic Summary - Captive Population

| GENETIC SUMMARY | LIVING DESCENDANT POPULATION | POTENTIAL |
|---|------------------------------|-----------|
| Number of founders: | 13 | 13 |
| Mean retention: | 0.677 | 0.677 |
| Founder genomes surviving: | 8.797 | 8.797 |
| Founder Genome Equivalents: | 5.275 | 8.797 |
| Fraction source gene diversity retained: | 0.905 | 0.943 |
| Fraction wild source gene diversity lost: | 0.095 | 0.057 |
| Mean inbreeding coefficient: | 0.053 | |

Founder number 17 has only one living descendant in the Captive population. This animal, SB# 255 is behaviorally non-reproductive and his genes may be lost from the gene pool. Reproductive evaluation of #255 is underway, and efforts for capturing his genes through sperm storage and artificial insemination are being investigated.

Table 8

FOUNDER analysis for FREE RANGING REDWOLF POPULATION Analysis date: 24/09/97

Founder calculations omit UNKNOWNs.

| | | | | | | | |
|------------------------------|---------|---------|--------|---------|---------|--------|--------|
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 24 | 26 | 33 | 34 | | | |
| Founder contributions | | | | | | | |
| | 25.8728 | 13.8708 | 8.5625 | 21.8101 | 14.4949 | 5.2070 | 3.4384 |
| | 12.0319 | 8.4091 | 4.8474 | 4.6096 | | | |
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 24 | 26 | 33 | 34 | | | |
| Fractional contributions | | | | | | | |
| | 0.2101 | 0.1126 | 0.0695 | 0.1771 | 0.1177 | 0.0423 | 0.0279 |
| | 0.0977 | 0.0683 | 0.0394 | 0.0374 | | | |
| Founders | 6 | 8 | 11 | 12 | 13 | 14 | 16 |
| Founders | 24 | 26 | 33 | 34 | | | |
| Number of living descendants | | | | | | | |
| | 139 | 114 | 70 | 139 | 138 | 108 | 47 |
| | 109 | 110 | 103 | 55 | | | |

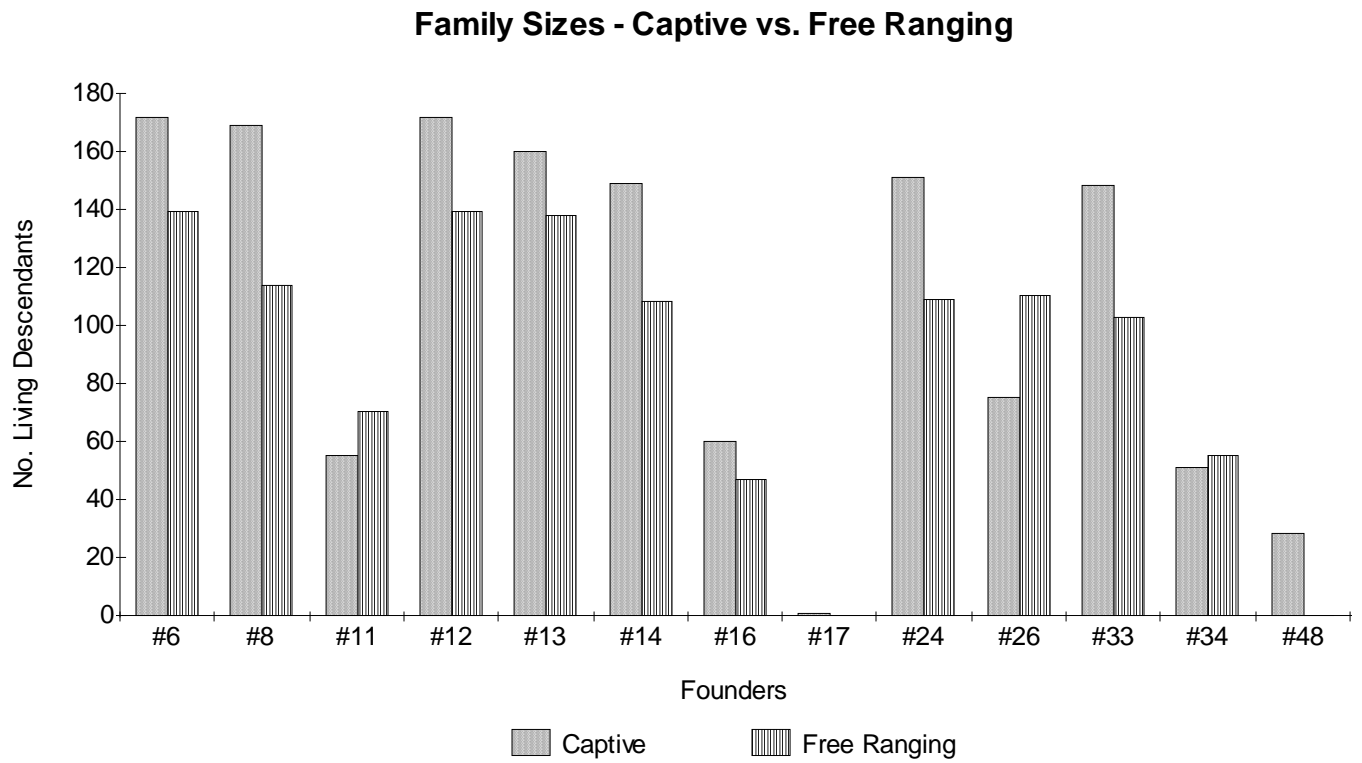
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Genetic Summary - FREE RANGING Population

| GENETIC SUMMARY | LIVING DESCENDANT POPULATION | POTENTIAL |
|---|------------------------------|-----------|
| Number of founders: | 11 | 11 |
| Mean retention: | 0.629 | 0.629 |
| Founder genomes surviving: | 6.919 | 6.919 |
| Founder Genome Equivalents: | 3.990 | 6.919 |
| Fraction source gene diversity retained: | 0.875 | 0.928 |
| Fraction wild source gene diversity lost: | 0.125 | 0.072 |
| Mean inbreeding coefficient: | 0.073 | |

Two founders are represented in the captive population that are not represented in the free ranging population. Transfer of offspring from the captive to free ranging population can raise the potential number of founders in the free ranging population to 13. However, founder number 17 has only one representative in the captive population, and his genes will likely be lost from the gene pool, making a more realistic estimate of the potential number of founders for the free ranging population as 12.

FIGURE 2



1998 RECOMMENDATIONS

NOTE: Animals not recommended for breeding or transfer should be maintained at their current location and be prevented from producing offspring by contraception or by separating males and females during the breeding season.

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=====
Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event
=====
Chaffee Zool Gardens of Fresno, Fresno, CA, USA

    511   M   4 Apr 1992   356   248   FOSSILRIM   4 Apr 1992   5026   Birth
                                FRESNO      8 Feb 1993   6583   Transfer

    512   M   4 Apr 1992   356   248   FOSSILRIM   4 Apr 1992   5027   Birth
                                FRESNO      8 Feb 1993   6584   Transfer

Totals: 2.0.0 (2)
  
```

BREED: NONE

TRANSFER/RECEIVE: NONE

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=====
Beardsley Zoological Gardens, Bridgeport, CT, USA

    303   F   6 May 1986   227   194   TACOMA      6 May 1986   0303   Birth
                                TALLAHASE   6 Dec 1988   WG303   Transfer
                                ST.VINCE    17 Jan 1990   303     Transfer
                                GATLINBRG  28 Jan 1991   303     Transfer
                                MANTEO      20 Sep 1992   303     Transfer
                                BRIDGEPRT   6 Jan 1993   10502   Transfer

    690   F   20 Apr 1994   405   303   BRIDGEPRT   20 Apr 1994   10879   Birth

    692   F   20 Apr 1994   405   303   BRIDGEPRT   20 Apr 1994   10881   Birth

Totals: 0.3.0 (3)
  
```

BREED: NONE

TRANSFER/RECEIVE: NONE

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=====
National Zoological Park - Wash, Washington, DC, USA

    277   F   6 May 1985   34    132   TACOMA      6 May 1985   0277   Birth
                                SYRACUSE    9 Jan 1989   M89001  Transfer
                                TACOMA      13 Dec 1989   0277   Transfer
                                NZP-WASH    19 Sep 1990   109767  Transfer

    431   M   4 May 1990   212   297   TACOMA      4 May 1990   0431   Birth
                                TALLAHASE   18 Dec 1991   0431   Transfer
                                NZP-WASH    18 Dec 1996   113012  Transfer

Totals: 1.1.0 (2)
  
```

BREED: 431 X 277

TRANSFER/RECEIVE: NONE

OTHER: Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #277 for reproductive evaluation.

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| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|--|-----|-------------|------|-----|-----------|-------------|----------|----------|
| Lowry Park Zoological Garden, Tampa, FL, USA | | | | | | | | |
| 313 | F | 26 Apr 1987 | 242 | 279 | TACOMA | 26 Apr 1987 | 0313 | Birth |
| | | | | | MANTEO | 22 Jan 1988 | 313 | Transfer |
| | | | | | WILDS | 9 Feb 1994 | 940205 | Transfer |
| | | | | | LOWRY | 10 Sep 1996 | 100781 | Transfer |
| 359 | M | 29 Apr 1989 | 293 | 301 | VICTOR TX | 29 Apr 1989 | 890051 | Birth |
| | | | | | LOWRY | 3 Jan 1990 | 100236 | Transfer |
| 469 | M | 26 Apr 1991 | 282 | 363 | WHEELING | 26 Apr 1991 | 1504 | Birth |
| | | | | | TACOMA | 4 Dec 1991 | 0469 | Transfer |
| | | | | | FOSSILRIM | 27 Jan 1993 | 5039 | Transfer |
| | | | | | VICTOR TX | 10 Feb 1995 | 950011 | Transfer |
| | | | | | FOSSILRIM | 10 May 1995 | 5039 | Transfer |
| | | | | | LOWRY | 21 Jan 1997 | 100817 | Transfer |
| 482 | M | 1 May 1991 | 335 | 277 | NZP-WASH | 1 May 1991 | 110073 | Birth |
| | | | | | WILDS | 11 Dec 1991 | 911203 | Transfer |
| | | | | | LOWRY | 10 Sep 1996 | 100780 | Transfer |
| 725 | F | 3 May 1994 | 428 | 390 | FOSSILRIM | 3 May 1994 | 5044 | Birth |
| | | | | | LOWRY | 16 Nov 1995 | 100721 | Transfer |
| 726 | F | 3 May 1994 | 428 | 390 | FOSSILRIM | 3 May 1994 | 5045 | Birth |
| | | | | | LOWRY | 16 Nov 1995 | 100722 | Transfer |
| Totals: 3.3.0 (6) | | | | | | | | |

BREED: 482 X 792 (or 793)

**TRANSFER/RECEIVE: Receive #792 or 793 from Tacoma
Transfer #313, location to be determined**

Tallahassee Mus History & Natural Sc, Tallahassee, FL, USA

| | | | | | | | | |
|-------------------|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 494 | F | 10 May 1991 | 272 | 195 | TACOMA | 10 May 1991 | 0494 | Birth |
| | | | | | TALLAHASE | 2 Mar 1994 | 494 | Transfer |
| 549 | M | 1 May 1992 | 335 | 315 | BATONROUG | 1 May 1992 | 2534 | Birth |
| | | | | | WCSRC | 5 May 1995 | 9508 | Transfer |
| | | | | | ASHEBORO | 15 Nov 1995 | 1381 | Transfer |
| | | | | | TALLAHASE | 18 Mar 1997 | 97L002 | Transfer |
| Totals: 1.1.0 (2) | | | | | | | | |

BREED: NONE

TRANSFER/RECEIVE: NONE

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|---------------------------------|-----|-------------|------|-----|-----------|-------------|----------|----------|
| Brevard Zoo, Melbourne, FL, USA | | | | | | | | |
| 390 | F | 21 May 1989 | 212 | 195 | TACOMA | 21 May 1989 | 0390 | Birth |
| | | | | | BIRMINGHM | 4 Dec 1990 | 2100 | Transfer |
| | | | | | FOSSILRIM | 13 Jan 1993 | 5038 | Transfer |
| | | | | | ROCKLEDGE | 13 Feb 1997 | 940270 | Transfer |
| 722 | M | 3 May 1994 | 428 | 390 | FOSSILRIM | 3 May 1994 | 5041 | Birth |
| | | | | | ROCKLEDGE | 26 Apr 1996 | 940180 | Transfer |
| 723 | M | 3 May 1994 | 428 | 390 | FOSSILRIM | 3 May 1994 | 5042 | Birth |
| | | | | | ROCKLEDGE | 26 Apr 1996 | 940181 | Transfer |
| 724 | M | 3 May 1994 | 428 | 390 | FOSSILRIM | 3 May 1994 | 5043 | Birth |
| | | | | | ROCKLEDGE | 26 Apr 1996 | 940182 | Transfer |
| Totals: 3.1.0 (4) | | | | | | | | |

BREED: NONE

TRANSFER/RECEIVE: Transfer #390, location to be determined

| | | | | | | | | |
|---------------------------------------|---|-------------|-----|-----|-----------|-------------|--------|----------|
| Miller Park Zoo, Bloomington, IL, USA | | | | | | | | |
| 490 | M | 10 May 1991 | 272 | 195 | TACOMA | 10 May 1991 | 0490 | Birth |
| | | | | | BLOOMINGT | 23 Jun 1993 | M853 | Transfer |
| 740 | M | 13 May 1994 | 490 | 420 | BLOOMINGT | 13 May 1994 | M94042 | Birth |
| 742 | M | 13 May 1994 | 490 | 420 | BLOOMINGT | 13 May 1994 | M94046 | Birth |
| Totals: 3.0.0 (3) | | | | | | | | |

BREED: NONE

TRANSFER/RECEIVE: NONE

| | | | | | | | | |
|---|---|-------------|-----|-----|-----------|-------------|------|----------|
| Henson Robinson Zoo, Springfield, IL, USA | | | | | | | | |
| 491 | M | 10 May 1991 | 272 | 195 | TACOMA | 10 May 1991 | 0491 | Birth |
| | | | | | SPRINGFIE | 2 Feb 1993 | 413 | Transfer |
| 522 | F | 14 Apr 1992 | 372 | 382 | MANTEO | 14 Apr 1992 | 522 | Birth |
| | | | | | GATLINBRG | 12 May 1992 | 522 | Transfer |
| | | | | | MANTEO | 18 Jun 1993 | 522 | Transfer |
| | | | | | GATLINBRG | 15 Jan 1996 | 522 | Transfer |
| | | | | | SPRINGFIE | 23 Dec 1996 | 497 | Transfer |
| Totals: 1.1.0 (2) | | | | | | | | |

BREED: NONE

TRANSFER/RECEIVE: NONE

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=====
Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event
=====
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Land Between the Lakes, Golden Pond, KY, USA

| | | | | | | | | |
|-----|---|------------|-----|-----|-----------|-------------|--------|----------|
| 476 | M | 1 May 1991 | 293 | 278 | VICTOR TX | 1 May 1991 | 890179 | Birth |
| | | | | | WILDS | 20 Nov 1991 | 911106 | Transfer |
| | | | | | PROVIDNCE | 9 Jan 1992 | 921001 | Transfer |
| | | | | | TREVOR | 19 Jan 1993 | 93M407 | Transfer |
| 637 | F | 4 May 1993 | 476 | 324 | TREVOR | 4 May 1993 | 93M422 | Birth |
| | | | | | SYRACUSE | 27 Nov 1995 | UNK | Transfer |
| | | | | | GOLDENPND | 14 May 1996 | 637 | Transfer |
| | | | | | | | | |

Totals: 1.1.0 (2)

BREED: NONE

TRANSFER/RECEIVE: NONE

Alexandria Zoological Park, Alexandria, LA, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 406 | M | 10 Apr 1990 | 293 | 248 | VICTOR TX | 10 Apr 1990 | 890134 | Birth |
| | | | | | ALEXANDRI | 19 Dec 1990 | 131003 | Transfer |
| 629 | F | 3 May 1993 | 292 | 493 | DURHAN MS | 3 May 1993 | 629 | Birth |
| | | | | | WCSRC | 16 Feb 1994 | 629 | Transfer |
| | | | | | ALEXANDRI | 10 May 1995 | 131007 | Transfer |

Totals: 1.1.0 (2)

BREED: NONE

TRANSFER/RECEIVE: NONE

Carlos Avery Game Farm, Forest Lake, M, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 477 | M | 1 May 1991 | 293 | 278 | VICTOR TX | 1 May 1991 | 890180 | Birth |
| | | | | | WILDS | 20 Nov 1991 | 911107 | Transfer |
| | | | | | CARLOS AV | 18 Dec 1996 | UNK | Transfer |
| 478 | M | 1 May 1991 | 293 | 278 | VICTOR TX | 1 May 1991 | 890181 | Birth |
| | | | | | WILDS | 20 Nov 1991 | 911108 | Transfer |
| | | | | | CARLOS AV | 18 Dec 1996 | UNK | Transfer |
| 479 | M | 1 May 1991 | 293 | 278 | VICTOR TX | 1 May 1991 | 890182 | Birth |
| | | | | | WILDS | 20 Nov 1991 | 911109 | Transfer |
| | | | | | CARLOS AV | 18 Dec 1996 | UNK | Transfer |
| 535 | F | 22 Apr 1992 | 282 | 439 | WHEELING | 22 Apr 1992 | 1619 | Birth |
| | | | | | WILDS | 4 Feb 1994 | 940204 | Transfer |
| | | | | | CARLOS AV | 18 Dec 1996 | UNK | Transfer |

Totals: 3.1.0 (4)

BREED: NONE

TRANSFER/RECEIVE: NONE

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|---|-----|-------------|------|-----|-----------|-------------|----------|----------|
| Wild Canid Survival & Res Center, Eureka, MO, USA | | | | | | | | |
| 420 | F | 29 Apr 1990 | 335 | 277 | TACOMA | 29 Apr 1990 | 0420 | Birth |
| | | | | | BLOOMINGT | 23 Jun 1993 | M854 | Transfer |
| | | | | | WCSRC | 31 Jan 1995 | 9502 | Transfer |
| 493 | F | 10 May 1991 | 272 | 195 | TACOMA | 10 May 1991 | 0493 | Birth |
| | | | | | DURHAN MS | 1 Feb 1993 | 493 | Transfer |
| | | | | | WCSRC | 16 Feb 1994 | 493 | Transfer |
| 615 | M | 27 Apr 1993 | 350 | 305 | GOLDENPND | 27 Apr 1993 | 615 | Birth |
| | | | | | WCSRC | 7 Feb 1994 | 615 | Transfer |
| 616 | M | 27 Apr 1993 | 350 | 305 | GOLDENPND | 27 Apr 1993 | 616 | Birth |
| | | | | | WCSRC | 7 Feb 1994 | 616 | Transfer |
| 625 | M | 3 May 1993 | 292 | 493 | DURHAN MS | 3 May 1993 | 625 | Birth |
| | | | | | WCSRC | 17 Feb 1994 | 625 | Transfer |
| 627 | M | 3 May 1993 | 292 | 493 | DURHAN MS | 3 May 1993 | 627 | Birth |
| | | | | | WCSRC | 17 Feb 1994 | 627 | Transfer |
| 628 | F | 3 May 1993 | 292 | 493 | DURHAN MS | 3 May 1993 | 628 | Birth |
| | | | | | WCSRC | 16 Feb 1994 | 628 | Transfer |
| 743 | F | 13 May 1994 | 490 | 420 | BLOOMINGT | 13 May 1994 | M94044 | Birth |
| | | | | | WCSRC | 31 Jan 1995 | 9503 | Transfer |
| 744 | F | 13 May 1994 | 490 | 420 | BLOOMINGT | 13 May 1994 | M94047 | Birth |
| | | | | | WCSRC | 31 Jan 1995 | 9504 | Transfer |

Totals: 4.5.0 (9)

-----BRE

ED: NONE

TRANSFER/RECEIVE: NONE

Ross Park Zoo, Binghamton, NY, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 353 | M | 15 Apr 1989 | 219 | 303 | TALLAHASE | 15 Apr 1989 | 101015 | Birth |
| | | | | | BINGHAMTO | 5 Sep 1990 | 901325 | Transfer |
| 388 | F | 21 May 1989 | 212 | 195 | TACOMA | 21 May 1989 | 0388 | Birth |
| | | | | | BINGHAMTO | 5 Sep 1990 | 901326 | Transfer |

Totals: 1.1.0 (2)

BREED: NONE

TRANSFER/RECEIVE: Receive #348 & 624 from Roger Williams

Transfer #353 to Tacoma

Transfer #388 to Roger Williams

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|------------------------------------|-----|-------------|------|-----|-----------|-------------|----------|----------|
| Burnet Park Zoo, Syracuse, NY, USA | | | | | | | | |
| 387 | M | 21 May 1989 | 212 | 195 | TACOMA | 21 May 1989 | 0387 | Birth |
| | | | | | SYRACUSE | 4 Dec 1990 | M90082 | Transfer |
| 531 | F | 17 Apr 1992 | 299 | 278 | KNOXVILLE | 17 Apr 1992 | 1509 | Birth |
| | | | | | MANTEO | 20 Jan 1993 | 531 | Transfer |
| | | | | | FOSSILRIM | 21 Jul 1994 | 5047 | Transfer |
| | | | | | SYRACUSE | 21 Jan 1997 | M97003 | Transfer |

Totals: 1.1.0 (2)

BREED: 387 X 531

TRANSFER/RECEIVE: NONE

OTHER: Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #531 for reproductive evaluation.

Trevor Zoo, Millbrook, NY, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 324 | F | 12 May 1987 | 179 | 245 | TACOMA | 12 May 1987 | 0324 | Birth |
| | | | | | BRIDGEPRT | 28 Jan 1991 | 10320 | Transfer |
| | | | | | TREVOR | 11 Jan 1993 | 93M406 | Transfer |
| 636 | M | 4 May 1993 | 476 | 324 | TREVOR | 4 May 1993 | 93M423 | Birth |
| | | | | | SYRACUSE | 27 Jan 1995 | M95001 | Transfer |
| | | | | | TREVOR | 28 Apr 1995 | 93M423 | Transfer |

Totals: 1.1.0 (2)

BREED: NONE

TRANSFER/RECEIVE: NONE

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|---|-----|-------------|------|-----|-----------|-------------|----------|----------|
| North Carolina Zoological Park, Asheboro, NC, USA | | | | | | | | |
| 457 | F | 25 Apr 1991 | 212 | 371 | TACOMA | 25 Apr 1991 | 0457 | Birth |
| | | | | | MILL MOUN | 3 Feb 1993 | A002 | Transfer |
| | | | | | ASHEBORO | 20 Dec 1995 | 1384 | Transfer |
| 543 | M | 26 Apr 1992 | 386 | 277 | NZP-WASH | 26 Apr 1992 | 110578 | Birth |
| | | | | | WILDS | 27 Jan 1993 | 930103 | Transfer |
| | | | | | LOWRY | 28 Aug 1996 | 100778 | Transfer |
| | | | | | ASHEBORO | 18 Dec 1996 | 1402 | Transfer |
| 550 | F | 1 May 1992 | 335 | 315 | BATONROUG | 1 May 1992 | 2535 | Birth |
| | | | | | WCSRC | 5 May 1995 | 9509 | Transfer |
| | | | | | ASHEBORO | 15 Nov 1995 | 1382 | Transfer |
| 551 | F | 1 May 1992 | 335 | 315 | BATONROUG | 1 May 1992 | 2536 | Birth |
| | | | | | WCSRC | 5 May 1995 | 9510 | Transfer |
| | | | | | ASHEBORO | 15 Nov 1995 | 1383 | Transfer |
| 604 | F | 20 Apr 1993 | 386 | 277 | NZP-WASH | 20 Apr 1993 | 110966 | Birth |
| | | | | | MANTEO | 5 Apr 1994 | 604 | Transfer |
| | | | | | ASHEBORO | 19 Jan 1995 | 1348 | Transfer |
| 730 | F | 8 May 1994 | 282 | 457 | MILL MOUN | 8 May 1994 | A005 | Birth |
| | | | | | ASHEBORO | 20 Dec 1995 | 1385 | Transfer |
| 731 | F | 8 May 1994 | 282 | 457 | MILL MOUN | 8 May 1994 | A006 | Birth |
| | | | | | ASHEBORO | 20 Dec 1995 | 1386 | Transfer |
| 917 | M | 9 May 1997 | 543 | 457 | ASHEBORO | 9 May 1997 | 1407 | Birth |
| 918 | F | 9 May 1997 | 543 | 457 | ASHEBORO | 9 May 1997 | 1408 | Birth |
| 919 | F | 9 May 1997 | 543 | 457 | ASHEBORO | 9 May 1997 | 1409 | Birth |
| 920 | F | 9 May 1997 | 543 | 457 | ASHEBORO | 9 May 1997 | 1410 | Birth |
| 921 | F | 9 May 1997 | 543 | 457 | ASHEBORO | 9 May 1997 | 1411 | Birth |
| Totals: 2.10.0 (12) | | | | | | | | |

BREED: NONE

TRANSFER/RECEIVE: Transfer #604 to Horn Island.

=====

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|--------|-----|------------|------|-----|----------|------|----------|-------|
|--------|-----|------------|------|-----|----------|------|----------|-------|

=====

Western North Carolina Nature Center, Asheville, NC, USA

| | | | | | | | | |
|-----------|------------|------------|----------|-----|-----------|-------------|--------|----------|
| 278 | F | 6 May 1985 | 34 | 132 | TACOMA | 6 May 1985 | 0278 | Birth |
| | | | | | WHEELING | 28 Dec 1988 | 1250 | Transfer |
| | | | | | KNOXVILLE | 18 Dec 1990 | 1411 | Transfer |
| | | | | | VICTOR TX | 17 Jan 1991 | 890161 | Transfer |
| | | | | | KNOXVILLE | 20 Nov 1991 | 1411 | Transfer |
| | | | | | SPRINGFIE | 19 Dec 1992 | 407 | Transfer |
| | | | | | GATLINBRG | 27 Dec 1996 | 278 | Transfer |
| ASHEVILLE | 2 Jan 1997 | 278 | Transfer | | | | | |
| 432 | M | 4 May 1990 | 212 | 297 | TACOMA | 4 May 1990 | 0432 | Birth |
| | | | | | ASHEVILLE | 18 Dec 1991 | 432 | Transfer |

Totals: 1.1.0 (2)

BREED: 432 X 278

TRANSFER/RECEIVE: NONE

N C Museum of Life and Science, Durham, NC, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|-------|----------|
| 441 | F | 17 May 1990 | 341 | 243 | BRIDGEPRT | 17 May 1990 | 10251 | Birth |
| | | | | | FOSSILRIM | 22 Jan 1991 | 5018 | Transfer |
| | | | | | TALLAHASE | 3 Dec 1991 | 441 | Transfer |
| | | | | | DURHAN MS | 14 Jun 1994 | 441 | Transfer |
| 841 | M | 5 May 1996 | 471 | 545 | WHEELING | 5 May 1996 | UNK | Birth |
| | | | | | DURHAN MS | 20 Jan 1997 | 841 | Transfer |
| 842 | M | 5 May 1996 | 471 | 545 | WHEELING | 5 May 1996 | UNK | Birth |
| | | | | | DURHAN MS | 20 Jan 1997 | 842 | Transfer |

Totals: 2.1.0 (3)

BREED: NONE

TRANSFER/RECEIVE: Transfer #441, location to be determined.

The Wilds, Cumberland, OH, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|----------|-------------|--------|----------|
| 483 | F | 1 May 1991 | 335 | 277 | NZP-WASH | 1 May 1991 | 110074 | Birth |
| | | | | | WILDS | 11 Dec 1991 | 911204 | Transfer |
| 485 | F | 1 May 1991 | 335 | 277 | NZP-WASH | 1 May 1991 | 110076 | Birth |
| | | | | | WILDS | 11 Dec 1991 | 911205 | Transfer |
| 533 | F | 22 Apr 1992 | 282 | 439 | WHEELING | 22 Apr 1992 | 1617 | Birth |

| | | | | | | | | |
|-----|---|-------------|-----|-----|----------|-------------|--------|----------|
| | | | | | WILDS | 4 Feb 1994 | 940202 | Transfer |
| 534 | F | 22 Apr 1992 | 282 | 439 | WHEELING | 22 Apr 1992 | 1618 | Birth |
| | | | | | WILDS | 4 Feb 1994 | 940203 | Transfer |

Totals: 0.4.0 (4)

BREED: NONE

TRANSFER/RECEIVE: NONE

=====

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|-------------------------------------|-----|------------|------|-----|-----------|------------|----------|-------|
| Pittsburgh Zoo, Pittsburgh, PA, USA | | | | | | | | |
| 643 | M | 5 May 1993 | 436 | 425 | PITTSBURG | 5 May 1993 | 100732 | Birth |
| 645 | M | 5 May 1993 | 436 | 425 | PITTSBURG | 5 May 1993 | 100734 | Birth |
| 646 | F | 5 May 1993 | 436 | 425 | PITTSBURG | 5 May 1993 | 100735 | Birth |

Totals: 2.1.0 (3)

BREED: NONE

TRANSFER/RECEIVE: NONE

Roger Williams Park Zoo, Providence, RI, USA

| | | | | | | | | |
|-----|---|------------|-----|-----|-----------|-------------|--------|----------|
| 348 | F | 3 May 1988 | 280 | 269 | AUDUBON | 3 May 1988 | 967 | Birth |
| | | | | | TACOMA | 20 Jan 1989 | 0348 | Transfer |
| | | | | | PROVIDNCE | 7 Jan 1991 | 911002 | Transfer |
| 624 | F | 1 May 1993 | 299 | 348 | PROVIDNCE | 1 May 1993 | 931051 | Birth |

Totals: 0.2.0 (2)

ED: 568 (or 569) x 388

TRANSFER/RECEIVE: Transfer #348 & 624 to Ross Park
Receive #388 from Ross Park
Receive #568 or 569 from Tacoma

OTHER: Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #388 for reproductive evaluation.

Great Plains Zoo, Sioux Falls, SD, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 405 | M | 10 Apr 1990 | 293 | 248 | VICTOR TX | 10 Apr 1990 | 890143 | Birth |
| | | | | | BRIDGEPRT | 13 Dec 1990 | 10301 | Transfer |
| | | | | | SIOUX FAL | 15 Feb 1995 | 1683 | Transfer |
| 419 | F | 29 Apr 1990 | 335 | 277 | TACOMA | 29 Apr 1990 | 0419 | Birth |
| | | | | | SIOUX FAL | 6 Feb 1993 | 1439 | Transfer |
| 619 | M | 29 Apr 1993 | 356 | 297 | KNOXVILLE | 29 Apr 1993 | 1566 | Birth |
| | | | | | SIOUX FAL | 18 Jun 1997 | 2025 | Transfer |
| 620 | M | 29 Apr 1993 | 356 | 297 | KNOXVILLE | 29 Apr 1993 | 1567 | Birth |
| | | | | | SIOUX FAL | 18 Jun 1997 | 2027 | Transfer |

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|------|----------|
| 621 | M | 29 Apr 1993 | 356 | 297 | KNOXVILLE | 29 Apr 1993 | 1569 | Birth |
| | | | | | SIoux FAL | 18 Jun 1997 | 2026 | Transfer |

Totals: 4.1.0 (5)

BREED: 489 x 419

**TRANSFER/RECEIVE: Receive #489 from Knoxville.
 Transfer #405 to Knoxville.**

OTHER: Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #419 for reproductive evaluation.

=====

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|--------|-----|------------|------|-----|----------|------|----------|-------|
|--------|-----|------------|------|-----|----------|------|----------|-------|

 Knoxville Zoological Gardens, Knoxville, TN, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|------------|-------------|--------|----------|
| 489 | M | 10 May 1991 | 272 | 195 | TACOMA | 10 May 1991 | 0489 | Birth |
| | | | | | AUDUBON | 27 Jan 1993 | 1508 | Transfer |
| | | | | | AUDUB SSC | 3 Nov 1993 | M94002 | Transfer |
| | | | | | AUDUBON | 31 May 1996 | 1508 | Transfer |
| | | | | | GATLINBERG | 15 Apr 1997 | 489 | Transfer |
| | | | | | KNOXVILLE | 15 May 1997 | UNK | Transfer |
| 622 | F | 29 Apr 1993 | 356 | 297 | KNOXVILLE | 29 Apr 1993 | 1568 | Birth |

Totals: 1.1.0 (2)

BREED: NONE

**TRANSFER/RECEIVE: Transfer #489 to Sioux Falls
 Receive #405 from Sioux Falls**

Chattanooga Nature Center, Chattanooga, TN, USA

| | | | | | | | | |
|-----|---|------------|-----|-----|-----------|-------------|--------|----------|
| 513 | M | 4 Apr 1992 | 356 | 248 | FOSSILRIM | 4 Apr 1992 | 5028 | Birth |
| | | | | | AUDUB SSC | 22 Feb 1994 | M94006 | Transfer |
| | | | | | CHATT NAT | 17 Jun 1996 | 513 | Transfer |
| 514 | M | 4 Apr 1992 | 356 | 248 | FOSSILRIM | 4 Apr 1992 | 5029 | Birth |
| | | | | | AUDUB SSC | 22 Feb 1994 | M94007 | Transfer |
| | | | | | CHATT NAT | 17 Jun 1996 | 514 | Transfer |
| 516 | F | 4 Apr 1992 | 356 | 248 | FOSSILRIM | 4 Apr 1992 | 5031 | Birth |
| | | | | | AUDUB SSC | 22 Feb 1994 | M94009 | Transfer |
| | | | | | CHATT NAT | 17 Jun 1996 | 516 | Transfer |

Totals: 2.1.0 (3)

BREED: NONE

TRANSFER/RECEIVE: NONE

=====

Fort Worth Zoological Park, Ft Worth, TX, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 342 | F | 18 May 1988 | 268 | 215 | SYRACUSE | 18 May 1988 | M88065 | Birth |
| | | | | | TACOMA | 22 Feb 1989 | 0342 | Transfer |
| | | | | | LOWRY | 5 Dec 1990 | 100309 | Transfer |
| | | | | | FORTWORTH | 2 Feb 1994 | 975 | Transfer |

Totals: 0.1.0 (1)

BREED: 544 X 342

TRANSFER/RECEIVE: Receive #544 from Fossil Rim.

OTHER: Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #342 for reproductive evaluation.

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|------------------------------|-----|-------------|------|-----|-----------|-------------|----------|----------|
| Texas Zoo, Victoria, TX, USA | | | | | | | | |
| 293 | M | 28 Apr 1986 | 213 | 244 | GULF BREZ | 28 Apr 1986 | UNK | Birth |
| | | | | | TACOMA | 25 Sep 1986 | 0293 | Transfer |
| | | | | | VICTOR TX | 30 Nov 1988 | 890019 | Transfer |
| 557 | F | 1 May 1992 | 292 | 270 | FOSSILRIM | 1 May 1992 | 5035 | Birth |
| | | | | | VICTOR TX | 20 Jun 1996 | 960029 | Transfer |
| 559 | F | 1 May 1992 | 292 | 270 | FOSSILRIM | 1 May 1992 | 5037 | Birth |
| | | | | | VICTOR TX | 20 Jun 1996 | 960028 | Transfer |

Totals: 1.2.0 (3)

BREED: NONE

TRANSFER/RECEIVE: NONE

Fossil Rim Wildlife Center, Glen Rose, TX, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 364 | F | 2 May 1989 | 268 | 277 | SYRACUSE | 2 May 1989 | M89035 | Birth |
| | | | | | FOSSILRIM | 23 Jan 1997 | 5049 | Transfer |
| 386 | M | 21 May 1989 | 212 | 195 | TACOMA | 21 May 1989 | 0386 | Birth |
| | | | | | PROVIDNCE | 7 Jan 1991 | 911001 | Transfer |
| | | | | | NZP-WASH | 12 Dec 1991 | 110381 | Transfer |
| | | | | | FOSSILRIM | 28 Feb 1994 | 5040 | Transfer |
| 544 | M | 26 Apr 1992 | 386 | 277 | NZP-WASH | 26 Apr 1992 | 110579 | Birth |
| | | | | | WILDS | 27 Jan 1993 | 930104 | Transfer |
| | | | | | LOWRY | 28 Aug 1996 | 100779 | Transfer |
| | | | | | FOSSILRIM | 23 Jan 1997 | 5048 | Transfer |

Totals: 2.1.0 (3)

BREED: 386 x 364

TRANSFER/RECEIVE: Transfer #544 to Fort Worth

OTHER: Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #364 for reproductive evaluation.

Mill Mountain Zoo, Roanoke, VA, USA

| | | | | | | | | |
|-------------------|---|------------|-----|-----|-----------|------------|------|-------|
| 728 | M | 8 May 1994 | 282 | 457 | MILL MOUN | 8 May 1994 | A007 | Birth |
| 729 | M | 8 May 1994 | 282 | 457 | MILL MOUN | 8 May 1994 | A008 | Birth |
| Totals: 2.0.0 (2) | | | | | | | | |

BREED: NONE

TRANSFER/RECEIVE: NONE

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|-------------------------------------|-----|-------------|------|-----|-----------|-------------|----------|----------|
| Point Defiance Zoo, Tacoma, WA, USA | | | | | | | | |
| 224 | M | 23 Apr 1983 | 11 | 54 | WCSRC | 23 Apr 1983 | 0211 | Birth |
| | | | | | BATONROUG | 7 Dec 1988 | 2024 | Transfer |
| | | | | | TACOMA | 5 Dec 1989 | 0211 | Transfer |
| 255 | M | 23 Apr 1984 | 137 | 112 | VICTOR TX | 23 Apr 1984 | UNK | Birth |
| | | | | | TACOMA | 8 Nov 1985 | 0255 | Transfer |
| 268 | M | 23 Apr 1985 | 53 | 79 | AUDUBON | 23 Apr 1985 | 0693 | Birth |
| | | | | | SYRACUSE | 3 Apr 1986 | M86040 | Transfer |
| | | | | | FOSSILRIM | 13 Dec 1989 | 5014 | Transfer |
| | | | | | TACOMA | 15 Jan 1991 | 0268 | Transfer |
| 269 | F | 23 Apr 1985 | 53 | 79 | AUDUBON | 23 Apr 1985 | 0694 | Birth |
| | | | | | TACOMA | 20 Jan 1989 | 0269 | Transfer |
| 294 | M | 29 Apr 1986 | 24 | 196 | TACOMA | 29 Apr 1986 | 0294 | Birth |
| | | | | | AUDUBON | 6 Dec 1988 | 0989 | Transfer |
| | | | | | TACOMA | 5 Dec 1989 | 0294 | Transfer |
| 301 | F | 6 May 1986 | 227 | 194 | TACOMA | 6 May 1986 | 0301 | Birth |
| | | | | | VICTOR TX | 30 Nov 1988 | 890018 | Transfer |
| | | | | | TACOMA | 19 Dec 1989 | 0301 | Transfer |
| 305 | F | 6 May 1986 | 227 | 194 | TACOMA | 6 May 1986 | 0305 | Birth |
| | | | | | WCSRC | 6 Dec 1988 | 0305 | Transfer |
| | | | | | GOLDENPND | 3 Feb 1993 | 305 | Transfer |
| | | | | | TACOMA | 3 Feb 1994 | 0305 | Transfer |
| 335 | M | 5 May 1988 | 213 | 245 | MANTEO | 5 May 1988 | 335 | Birth |
| | | | | | TACOMA | 8 Dec 1988 | 0335 | Transfer |
| | | | | | NZP-WASH | 19 Sep 1990 | 109766 | Transfer |
| | | | | | BATONROUG | 3 Dec 1991 | 2476 | Transfer |
| | | | | | TACOMA | 9 Feb 1993 | 0335 | Transfer |
| 356 | M | 29 Apr 1989 | 293 | 301 | VICTOR TX | 29 Apr 1989 | 890049 | Birth |
| | | | | | AUDUBON | 19 Dec 1989 | 1031 | Transfer |
| | | | | | FOSSILRIM | 10 Dec 1991 | 5022 | Transfer |
| | | | | | KNOXVILLE | 21 Dec 1992 | 1548 | Transfer |
| | | | | | TACOMA | 2 Feb 1994 | 0356 | Transfer |

| | | | | | | | | |
|-----|---|-------------|-----|-----|---|--|---|---|
| 363 | F | 2 May 1989 | 268 | 277 | SYRACUSE WHEELING TACOMA | 2 May 1989 12 Dec 1990 4 Dec 1991 | M89034 1480 0363 | Birth Transfer Transfer |
| 371 | F | 3 May 1989 | 291 | 233 | FOSSILRIM TACOMA | 3 May 1989 13 Dec 1989 | 5011 0371 | Birth Transfer |
| 409 | F | 10 Apr 1990 | 293 | 248 | VICTOR TX FOSSILRIM MANTEO WILDS TACOMA | 10 Apr 1990 8 Jan 1991 21 Nov 1991 6 Jan 1993 8 Feb 1994 | 890133 5020 409 930101 0409 | Birth Transfer Transfer Transfer Transfer |
| 436 | M | 10 May 1990 | 294 | 301 | TACOMA WILDS PITTSBURG TACOMA | 10 May 1990 11 Dec 1991 3 Mar 1992 16 Feb 1994 | 0436 911206 100478 0436 | Birth Transfer Transfer Transfer |

| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|--------|-----|-------------|------|-----|--|---|---------------------------------------|---|
| 439 | F | 10 May 1990 | 294 | 301 | TACOMA WHEELING TACOMA | 10 May 1990 18 Dec 1991 16 Dec 1992 | 0439 1566 0439 | Birth Transfer Transfer |
| 440 | F | 17 May 1990 | 341 | 243 | BRIDGEPRT FOSSILRIM TACOMA WHEELING TACOMA | 17 May 1990 22 Jan 1991 11 Apr 1991 22 Nov 1991 14 Jan 1992 | 10252 5017 0440 1564 0440 | Birth Transfer Transfer Transfer Transfer |
| 446 | M | 24 Apr 1991 | 350 | 297 | FRESNO TACOMA | 24 Apr 1991 28 Jan 1993 | 1680 0446 | Birth Transfer |
| 455 | M | 25 Apr 1991 | 212 | 371 | TACOMA | 25 Apr 1991 | 0455 | Birth |
| 456 | F | 25 Apr 1991 | 212 | 371 | TACOMA | 25 Apr 1991 | 0456 | Birth |
| 481 | M | 1 May 1991 | 335 | 277 | NZP-WASH BIRMINGHM TACOMA | 1 May 1991 8 Jan 1992 13 Jan 1993 | 110072 2313 0481 | Birth Transfer Transfer |
| 492 | M | 10 May 1991 | 272 | 195 | TACOMA SIOUX FAL TACOMA | 10 May 1991 6 Feb 1993 17 Aug 1994 | 0492 1440 0492 | Birth Transfer Transfer |
| 495 | F | 10 May 1991 | 272 | 195 | TACOMA | 10 May 1991 | 94M001 | Birth |
| 515 | F | 4 Apr 1992 | 356 | 248 | FOSSILRIM AUDUB SSC TACOMA | 4 Apr 1992 22 Feb 1994 3 Jul 1996 | 5030 M94008 0515 | Birth Transfer Transfer |
| 562 | F | 6 May 1992 | 294 | 253 | TACOMA | 6 May 1992 | 0562 | Birth |
| 567 | M | 8 May 1992 | 247 | 347 | TACOMA | 8 May 1992 | 0567 | Birth |
| 568 | M | 8 May 1992 | 247 | 347 | TACOMA | 8 May 1992 | 0568 | Birth |
| 569 | M | 8 May 1992 | 247 | 347 | TACOMA | 8 May 1992 | 0569 | Birth |

| | | | | | | | | |
|-----|---|-------------|-----|-----|--|---|-------------------------------|---|
| 571 | F | 8 May 1992 | 247 | 347 | TACOMA | 8 May 1992 | 0571 | Birth |
| 572 | F | 8 May 1992 | 247 | 347 | TACOMA | 8 May 1992 | 0572 | Birth |
| 573 | M | 11 May 1992 | 369 | 195 | TACOMA | 11 May 1992 | 0573 | Birth |
| 574 | M | 11 May 1992 | 369 | 195 | TACOMA | 11 May 1992 | 0574 | Birth |
| 576 | F | 11 May 1992 | 369 | 195 | TACOMA | 11 May 1992 | 0576 | Birth |
| 578 | F | 15 May 1992 | 268 | 301 | TACOMA | 15 May 1992 | 0578 | Birth |
| 579 | F | 15 May 1992 | 268 | 301 | TACOMA | 15 May 1992 | 0579 | Birth |
| 603 | F | 20 Apr 1993 | 386 | 277 | NZP-WASH MANTEO ASHEBORO TACOMA | 20 Apr 1993 5 Apr 1994 19 Jan 1995 17 Dec 1996 | 110965 603 1347 0603 | Birth Transfer Transfer Transfer |
| 605 | M | 24 Apr 1993 | 294 | 371 | TACOMA | 24 Apr 1993 | 0605 | Birth |
| 606 | F | 24 Apr 1993 | 294 | 371 | TACOMA | 24 Apr 1993 | 0606 | Birth |

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| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|--------|-----|------------|------|-----|----------|------|----------|-------|
|--------|-----|------------|------|-----|----------|------|----------|-------|

=====

| | | | | | | | | |
|-----|---|-------------|-----|-----|--------|-------------|------|-------|
| 607 | F | 24 Apr 1993 | 294 | 371 | TACOMA | 24 Apr 1993 | 0607 | Birth |
| 608 | F | 24 Apr 1993 | 294 | 371 | TACOMA | 24 Apr 1993 | 0608 | Birth |
| 648 | F | 8 May 1993 | 335 | 205 | TACOMA | 8 May 1993 | 0648 | Birth |
| 651 | M | 14 May 1993 | 247 | 338 | TACOMA | 14 May 1993 | 0651 | Birth |
| 652 | M | 14 May 1993 | 247 | 338 | TACOMA | 14 May 1993 | 0652 | Birth |
| 653 | M | 14 May 1993 | 247 | 338 | TACOMA | 14 May 1993 | 0653 | Birth |
| 656 | F | 17 May 1993 | 272 | 391 | TACOMA | 17 May 1993 | 0656 | Birth |
| 701 | M | 22 Apr 1994 | 436 | 409 | TACOMA | 22 Apr 1994 | 0701 | Birth |
| 702 | M | 22 Apr 1994 | 436 | 409 | TACOMA | 22 Apr 1994 | 0702 | Birth |
| 703 | F | 22 Apr 1994 | 436 | 409 | TACOMA | 22 Apr 1994 | 0703 | Birth |
| 704 | F | 22 Apr 1994 | 436 | 409 | TACOMA | 22 Apr 1994 | 0704 | Birth |
| 705 | F | 22 Apr 1994 | 436 | 409 | TACOMA | 22 Apr 1994 | 0705 | Birth |
| 790 | M | 6 May 1995 | 492 | 562 | TACOMA | 6 May 1995 | 0790 | Birth |
| 791 | M | 6 May 1995 | 492 | 562 | TACOMA | 6 May 1995 | 0791 | Birth |
| 792 | F | 6 May 1995 | 492 | 562 | TACOMA | 6 May 1995 | 0792 | Birth |
| 793 | F | 6 May 1995 | 492 | 562 | TACOMA | 6 May 1995 | 0793 | Birth |
| 923 | M | 16 May 1997 | 268 | 562 | TACOMA | 16 May 1997 | 0923 | Birth |
| 924 | M | 16 May 1997 | 268 | 562 | TACOMA | 16 May 1997 | 0924 | Birth |
| 925 | F | 16 May 1997 | 268 | 562 | TACOMA | 16 May 1997 | 0925 | Birth |

Totals: 26.29.0 (55)

BREED: 790 X 603
 268 X 562
 224 X 363
 455 X 269
 353 X 456
 294 X 656
 568 X 371
 481 X 792

TRANSFER/RECEIVE: Receive #353 from Ross Park
 Transfer #569 to Roger Williams
 Transfer #605 to Oglebay Zoo
 Transfer #793 to Lowry Park
 Transfer #790 (or 791) to Horn Island

OTHER: Collect semen from #255 and continue attempts to use in artificial insemination.
 Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #562,#363,#269,#456,#371
 for reproductive evaluation.

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| Stud # | Sex | Birth Date | Sire | Dam | Location | Date | Local ID | Event |
|---------------------------------------|-----|-------------|------|-----|-----------|-------------|----------|----------|
| Oglebay's Good Zoo, Wheeling, WV, USA | | | | | | | | |
| 471 | M | 28 Apr 1991 | 299 | 248 | KNOXVILLE | 28 Apr 1991 | 1436 | Birth |
| | | | | | WILDS | 12 Nov 1991 | 911105 | Transfer |
| | | | | | WHEELING | 4 Feb 1994 | 1814 | Transfer |
| 545 | F | 26 Apr 1992 | 386 | 277 | NZP-WASH | 26 Apr 1992 | 110580 | Birth |
| | | | | | WILDS | 27 Jan 1993 | 930102 | Transfer |
| | | | | | WHEELING | 4 Feb 1994 | 1813 | Transfer |

Totals: 1.1.0 (2)

BREED: 605 x 545

TRANSFER/RECEIVE: Receive #605 from Tacoma
 Transfer #471, location to be determined

OTHER: Collect fecal samples and send to Karen Goodrowe at Toronto Zoo from #545 for
 reproductive evaluation.

Racine Zoological Garden, Racine, WI, USA

| | | | | | | | | |
|-----|---|-------------|-----|-----|-----------|-------------|--------|----------|
| 638 | F | 4 May 1993 | 476 | 324 | TREVOR | 4 May 1993 | 93M421 | Birth |
| | | | | | RACINE | 31 Oct 1996 | 9626 | Transfer |
| 687 | M | 20 Apr 1994 | 405 | 303 | BRIDGEPRT | 20 Apr 1994 | 10876 | Birth |
| | | | | | SIOUX FAL | 15 Feb 1995 | 1684 | Transfer |
| | | | | | RACINE | 20 Jul 1995 | 9514 | Transfer |
| 688 | M | 20 Apr 1994 | 405 | 303 | BRIDGEPRT | 20 Apr 1994 | 10877 | Birth |
| | | | | | SIOUX FAL | 15 Feb 1995 | 1686 | Transfer |
| | | | | | RACINE | 20 Jul 1995 | 9515 | Transfer |
| 689 | M | 20 Apr 1994 | 405 | 303 | BRIDGEPRT | 20 Apr 1994 | 10878 | Birth |
| | | | | | SIOUX FAL | 15 Feb 1995 | 1685 | Transfer |
| | | | | | RACINE | 20 Jul 1995 | 9516 | Transfer |

Totals: 3.1.0 (4)

BREED: NONE

TRANSFER/RECEIVE: NONE

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Compiled by: WILLIAM WADDELL thru Point Defiance Zoo
SPARKS v1.4
September 1997