Table 1 – Genetic diversity summary statistics for coyotes and gray fox

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Species | Sampling Location | N | AT | AL | AR | Ho | He | %P |
| Coyote | East Bay | 30 | 113 | 8.9 | 8.8 | 0.63 | 0.76 | 100 |
|  | East I-680 | 6 | 55 | 4.2 | 3.5 | 0.72 | 0.62 | 100 |
|  | West I-680 | 20 | 99 | 7.6 | 3.9 | 0.60 | 0.73 | 100 |
|  | South I-580 | 4 | 54 | 4.2 | 3.9 | 0.69 | 0.66 | 100 |
|  | Sierra Nevada foothills | 67 | 152 | 11.9 | 10.2 | 0.72 | 0.82 | 100 |
|  | North I-80 | 9 | 83 | 6.4 | 4.3 | 0.62 | 0.75 | 100 |
|  | East SR 49 | 11 | 105 | 8.1 | 4.8 | 0.74 | 0.82 | 100 |
|  | West SR 49 | 8 | 80 | 6.2 | 4.3 | 0.74 | 0.76 | 100 |
|  | South US-50 | 3 | 37 | 2.9 | 2.8 | 0.89 | 0.59 | 100 |
|  | South I-80 | 3 | 36 | 2.8 | 2.8 | 0.81 | 0.56 | 100 |
|  | S I-80-N US-50 | 33 | 106 | 8.2 | 4.1 | 0.71 | 0.78 | 100 |
| Gray fox | East SR 49 | 37 | 96 | 7.4 | 7.29 | 0.60 | 0.71 | 100 |
|  | West SR 49 | 20 | 85 | 6.5 | 6.36 | 0.60 | 0.65 | 100 |
| N = sample size.  AT = total number of alleles  AL= mean number of alleles per locus.  AR = allelic richness, standardized to sample size.  Ho = observed heterozygosity.  He = expected heterozygosity.  %P = percent polymorphic loci. | | | | | | | | |

Table 2 – Pairwise FST values for the Bay Area (BA) and Sierra Nevada Foothills (SNF) sampling locations. P values are above the diagonal. Sequential Bonferroni corrected alpha = 0.0167.

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| --- | --- | --- | --- |
| East Bay | East I-680 | West I-680 | South I-580 |
| East I-680 | 0 | 0.174 | 0.174 |
| West I-680 | 0.058 | 0 | 0.174 |
| South I-580 | 0.131 | 0.064 | 0 |

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| --- | --- | --- | --- | --- | --- | --- |
| Sierra Nevada foothills | North I-80 | East SR 49 | West SR 49 | South US-50 | South I-80 | South I-80-North US-50 |
| North I-80 | 0 | 0.399 | 0.052 | 0.399 | 0.399 | 0.385 |
| East SR 49 | 0.007 | 0 | 0.385 | 0.099 | 0.245 | **0.003** |
| West SR 49 | 0.039 | 0.018 | 0 | 0.3 | 0.216 | **0.014** |
| South US-50 | 0.027 | 0.071 | 0.053 | 0 | 0.099 | 0.052 |
| South I-80 | 0.020 | 0.051 | 0.068 | 0.171 | 0 | 0.144 |
| South I-80- North US-50 | 0.010 | 0.028 | 0.034 | 0.063 | 0.047 | 0 |

Table 3 - Model selection results for linear mixed-effects models. AIC is the Akaike information criterion, AIC is the difference in AIC between the best model and each competing model. The best supported model for each region and species is bolded. For all but the East Bay, the highways have no effect. Only in the East Bay did we find evidence that traffic rates influence patterns of genetic distance.

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| --- | --- | --- | --- |
|  | Surface | AIC | DAIC |
| East Bay |  |  |  |
| Coyote | **Permeable landscape** | 711.63 | 0.010 |
|  | Permeable landscape + all highway impermeable | 711.63 | 0.010 |
|  | Permeable landscape + highway permeability binned to traffic | 711.64 | 0.000 |
| Sierra Nevada Foothills | |  |  |
| Coyote | Permeable landscape | 2371.77 | 0.000 |
|  | **Permeable landscape + all highway impermeable** | 2370.78 | 0.987 |
|  | Permeable landscape + highway permeability binned to traffic | 2371.02 | 0.743 |
|  |  |  |  |
| Gray Fox | Permeable landscape | 2780.15 | 0.000 |
|  | **Permeable landscape + all highway impermeable** | 2779.74 | 0.414 |
|  | Permeable landscape + highway permeability binned to traffic | 2779.92 | 0.238 |