Alaska Hatchery Research Group **Technical Document:**[1] #14

Title: Population Genetic Structure of Odd-Year Pink Salmon from Prince William Sound Based on a Single Year (2013) **Version:** 1.0

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Abstract

Pink salmon (*Oncorhynchus gorbuscha*) are commercially and ecologically important. In Prince William Sound (PWS), Alaska, pink salmon are the most abundant salmon harvested and generating the highest total value. An understanding of their population genetic structure is useful for conservation and management, especially given the magnitude of the hatchery program in the sound. We analyzed the population genetic structure of pink salmon from four hatcheries and 19 natural spawning areas in PWS and one hatchery in Kodiak Management Area (KMA) by genotyping 16 microsatellite loci for nearly 3000 pink salmon sampled in 2013. Across all populations in PWS, the number of alleles observed per locus ranged from 11 (*Ots7e*) to 87 (*Oki101*), and the total for all loci was 726. The fixation index (F_{ST}), a measure of population differentiation, was 0.002 over all loci and the F_{ST} of individual loci ranged from 0.001 to 0.003. Significant difference was detected among those populations from PWS, which means that pink salmon in PWS are not from a single large homogeneous population. The KMA collection was the most divergent. Within PWS, Solomon Gulch Hatchery in the northeastern PWS was distinct from all other collections and suggested that it had not received many migrants from other PWS areas. Early-run fish from Snug Harbor Creek were distinct from other samples.

Key words: Pink salmon, odd-year, Prince William Sound, population genetic structure, microsatellite.

Background of AHRG

Extensive ocean-ranching salmon aquaculture is practiced in Alaska by private non-profit corporations (PNP) to enhance common property fisheries. Most of the approximately 1.7B juvenile salmon PNP hatcheries release annually are pink salmon in Prince William Sound (PWS) and chum salmon in Southeast Alaska (SEAK; Vercessi 2013). The large scale of these hatchery programs has raised concerns among some that hatchery fish may have a detrimental impact on the productivity and sustainability of natural stocks. Others maintain that the potential for positive effects exists. ADF&G convened a Science Panel (Alaska Hatchery Research Group; AHRG) whose members have broad experience in salmon enhancement, management, and natural and hatchery fish interactions. The AHRG was tasked with answering three priority questions:

I. *What is the genetic stock structure of pink and chum salmon in each region (PWS and SEAK)*?;
II. *What is the extent and annual variability in straying of hatchery pink salmon in PWS and chum salmon in PWS and SEAK*?; and
III. *What is the impact on fitness (productivity) of natural pink and chum salmon stocks due to straying of hatchery pink and chum salmon*?

[1] This document serves as a record of communication between the Alaska Department of Fish and Game Commercial Fisheries Division and other members of the Science Panel of the Alaska Hatchery Research Program. As such, these documents serve diverse ad hoc information purposes and may contain basic, uninterpreted data. The contents of this document have not been subjected to review and should not be cited or distributed without the permission of the authors or the Commercial Fisheries Division

Introduction

Pink salmon (*Oncorhynchus gorbuscha*) are the most abundant Pacific salmon species in Asia and North America (Heard 1995). They are distributed in the North Pacific Ocean and adjacent waters. In Asia, the spawning areas of pink salmon range from North Korea to eastern Arctic Siberia. In North America, spawning pink salmon have been discovered from central California to the Mackenzie River in Arctic Canada (Heard 1995). Within the natural range, they have a strict 2-year life cycle and generally home to their natal streams to spawn, which has resulted in two different brood lines (odd-year and even-year; Aspinwall 1974). No gene flow occurs between those two brood lines (Beacham et al. 2012).

Pink salmon support a large commercial fishery in Prince William Sound (PWS). Initially, this fishery was supported by the wild pink salmon that home to streams throughout PWS. In the 1970's, pink salmon hatcheries were established with the goal of stabilizing harvests (Stopha 2013). These hatcheries used wild fish returning to PWS for their initial broodstock. These programs grew over the past four decades, helped the recovery of declining populations (Heard et al. 1995; Brannon et al. 2004), and increased fisheries (Bachen and Linley 1995; Heard et al. 1995; Wertheimer 1997). Currently, all hatchery-released fish in PWS are otolith marked (Brenner et al. 2012) allowing for identification in the fishery and on spawning grounds.

These large proportions of hatchery-origin fish, along with evidence of straying of hatchery fish into wild streams (Sharp et al. 1994; Joyce and Evans 2000; Brenner et al. 2012), have raised concerns that they may be influencing wild fish populations through ecological or genetic effects (e.g. Gharrett et al. 2001; Naish et al. 2007; Grant 2012). Direct genetic effects include hybridization between hatchery and wild populations and genetic introgression of hatchery genotypes into wild populations. Indirect effects include changed selection regimes or reductions in population size caused by competition, predation, disease, or other factors (Waples 1991). Both of those effects may change the population genetic structure of fish.

In 2011, ADF&G facilitated a panel of scientists composed of current and retired scientists from ADF&G, University of Alaska, private non-profit (PNP) hatchery corporations, and the National Marine Fisheries Service. This panel developed a study on the interactions between hatchery and wild salmon in Southeast Alaska and PWS (http://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.current_research). One of the questions raised by this panel was "What is the genetic stock structure of pink salmon in PWS?"

A limited study of the population genetic (stock) structure in PWS pink salmon was conducted in the 1970's (Nickerson 1979), followed by a more comprehensive study in the early 1990s (Seeb et al. 1999). Information from allozyme and mitochondrial DNA (mtDNA) was used to examine the genetic structure of even-year pink salmon in PWS (Seeb et al. 1999), in which a difference between upstream and tidal collections was observed in some streams. A lack of distinction between Armin F. Koernig Hatchery and most regions (Figure 1) was consistent with multiple origins of this stock within PWS (Seeb et al. 1999) and/or higher introgression rates from this hatchery to natural spawning aggregates. On the other hand, Solomon Gulch Hatchery in the Eastern area was distinct from populations in all regions other than the eastern populations, and consistent with a localized origin of its broodstock and lower introgression rates from this hatchery to natural spawning aggregates (Seeb et al. 1999).

Microsatellites are a useful molecular marker in ecological and conservation genetics studies because of their high variability and power to reveal population genetic structure (Narum et al. 2008). They have been used to evaluate fine-scale population structure in salmonids (Olsen et al. 1998a), to investigate population structure of pink salmon in British Columbia and Washington (Beacham et al. 2012), to study the genetic population divergence of hatchery stocks of chum salmon in Sakhalin (Afanas'ev et al. 2006), and to estimate stock composition of Chinook Salmon across the Pacific Rim (Beacham et al. 2008). Given their success in these other studies of salmon, we expected that they would provide a more sensitive tool than allozymes to investigate population structure among pink salmon in PWS.

In this study, we analyzed 16 microsatellite loci in the odd-year broodline of pink salmon collected during 2013. Those fish were from PWS (four hatcheries and 19 natural spawning areas) and Kodiak Management Area (KMA; one hatchery). This is a first step toward a better understanding of the existing relationships among naturally spawning groups of pink salmon within PWS, a necessary component for assessing the interaction of hatchery and wild pink salmon in this region.

In this report, we describe the population genetic structure of odd-year pink salmon from PWS collected in one year (2013).

To accomplish this goal, we posed three objectives as follows:

(1) Sample tissues from pink salmon collected in natural spawning areas and at hatcheries in PWS and at one hatchery in KMA.

(2) Genotype sampled fish at 16 microsatellite loci.

(3) Examine population genetic structure of pink salmon among natural spawning areas and hatcheries from PWS using KMA as an outlier population.

Methods

Sample collections

Sampling sites were selected using sampling information from pink salmon tissues collected from PWS between 1992 and 1996 for an *Exxon* Valdez Oil Spill Restoration project (Habicht et al. 1998). In addition, samples of brood were also collected from Kitoi Bay Hatchery on Afognak Island in KMA. The Kitoi samples served as an out group for this study, because it is remote from PWS and, presumably, there is limited gene flow between PWS and KMA.

Small sample sizes increase sampling error, which influences the estimated allele frequencies within populations (Beacham et al. 2012). In order to obtain adequate sample sizes of natural-origin fish for this study, we oversampled fish from natural spawning areas to mitigate for hatchery-origin samples in collections. Oversampling targets were developed using published rates of straying (Brenner et al. 2012) to estimate the collection sizes that would be required to make it likely (a 90% probability) that 100 natural-origin fish were sampled from each stream (Table 1). In addition, we collected 200 fish over four time periods (50 fish per period) from each hatchery.

Axillary processes and matching otoliths were collected from pink salmon spawning in natural areas. Only axillary processes were collected from fish sampled at hatcheries. Both sample types were preserved in 95% ethanol in a single well of a 48 deep well plate. Sample location, date, and the name of the sampler were recorded on each plate. After the samples were sent to Gene

Conservation Laboratory (GCL) of ADF&G, we separated otoliths from axillary process and shipped otoliths in 48 deep-well plates to the ADF&G Cordova Otolith Laboratory. The Cordova lab staff read the otoliths to distinguish natural-origin fish from hatchery-origin fish (Joyce and Evans 2000).

Laboratory

DNA was extracted from tissue with a Qiagen 96-well DNeasy® procedure (Qiagen, Valencia, CA). We analyzed a suite of 16 microsatellite loci- *Oki10* (Smith et al. 1998), *Oki101* (Beacham et al. 2011), *OtsG68*, *OtsG253b*, *OtsG311* (Williamson et al. 2002), *Ots213* (Greig et al. 2003), *Ots7e* (Wright et al. 2008), *One101*, *One102*, *One104*, *One109*, *One111*, *One114* (Olsen et al. 2000a), *Ssa407*, *Ssa408*, *Ssa419* (Cairney et al. 2000). These loci had been used previously to study the population structure of pink salmon in British Columbia and Washington (Beacham et al. 2012).

Polymerase chain reaction (PCR) was used to amplify microsatellite alleles with a Gene Amp PCR System 9700 (Applied Biosystems, Inc., Foster City, CA). The PCR was a 10-μL mixture of 2-μL template DNA (~ 0.1 μg/ μL) in 1x Colorless GoTaq Flexi Buffer (Applied Biosystems, Inc.), 1.5 mM $MgCl_2$, 0.20 mM of each nucleotide (Applied Biosystems Inc.), 0.40 μM of forward and reverse primers, 0.1 mg/mL of BSA (Sigma Inc. St. Louis, MO), 0.05 U GoTaq Flexi DNA polymerase (Promega Inc. Madison, WI), and deionized water. The thermal cycling procedures include one cycle of Taq polymerase activation for 3 minutes at 95^{o}C, followed by a denaturation for 30 seconds at 94^{o}C. The annealing and extension temperature and time for each locus are shown in Table 2. The 16 loci were separated into 3 plexes for electrophoresis. Approximately 0.5-μL of product from each PCR reaction was loaded into a 384-well reaction plate with 0.4-μL of GS500LIZ internal lane size standard (Applied Biosystems) and 9.0-μL of Hi-Di formamide (Applied Biosystems). The mixtures were size fractionated in an Applied Biosystems 3730 capillary DNA sequencer. Genotypes were scored by GeneMapper software, version 5.0 (Applied Biosystems). In a plot window of GeneMapper, usually one or two peaks are detected for each sample at each locus. An individual genotype was considered a failure if no peak or more than two peaks was detected.

Quality control

The overall failure rate was calculated by the number of failed genotypes divided by the total number of genotypes. We removed first-generation hatchery fish (identified by their otolith marks) from collections taken from the natural spawning areas and natural fish without otolith samples. To ensure high-quality data, we performed three quality control analyses.

(1) We removed fish with failed genotypes at 20% or more loci (more than 3 of 16) according to the "80% rule" (Dann et al. 2009). Those fish likely had poor quality DNA.

(2) We removed duplicate fish; pairs of individuals that share the same alleles in ≥ 95% of screened loci (15 of 16 loci). Duplicate genotypes can occur as a result of sampling or extracting the same individual twice. The individual missing the most genotypic data from each duplicate pair was removed from further analyses. If both individuals had the same amount of genotypic data, one fish from each duplicate pair was removed prior to further analyses.

(3) We examined genotype reproducibility. We re-extracted and genotyped 8% of the samples for the same set of microsatellite loci. This analysis was used to identify laboratory errors during

DNA extraction and genotyping and to estimate the background genotyping error rate. After laboratory errors were corrected, a discrepancy rate was calculated as the number of conflicting genotypes divided by the total number of genotypes compared. Background genotyping error rates were calculated as half the discrepancy rate by assuming that errors were equally likely in the original run as in the rerun.

Statistical analysis for population structure

Many of the preliminary analyses were conducted with GENEPOP v.4.3 (Rousset 2008).We estimated allele frequencies (Appendix A) and departure from Hardy-Weinberg equilibrium (HWE) in each collection at each locus. We conducted permutation tests for linkage disequilibrium within a collection. Analysis of linkage disequilibrium was to ensure that alleles at different loci were independent (not linked) from each other. The significance levels of these multiple tests were adjusted by sequential Bonferroni correction (Rice 1989). We examined genetic divergence and temporal homogeneity by using tests of homogeneity of allelic frequency profiles (pseudo-exact tests). When the tests of homogeneity indicated no difference among temporal collections ($P > 0.05$) from the same geographic location, we pooled them into a single population for analysis. The pseudo-exact tests were used to check the spatial homogeneity too. We estimated fixation indices (F_{ST}) and tested homogeneity for each locus over all populations. We calculated mean pairwise F_{ST} values over 16 microsatellite loci for each population. For all tests in GENEPOP, we set up 10,000 dememorisation steps, 1,000 batches, and 5,000 iterations per batch.

We used the program Arlequin v. 3.5.1.2 (Excoffier and Lischer 2010) to estimate the probability that the observed F_{ST} is different from 0.0 for each locus over all collections.

We examined the genetic similarities among populations by constructing a maximum-likelihood tree. We used the Cavalli-Sforza and Edwards (CSE) chord distance (Cavalli-Sforza and Edwards 1967) to generate a tree with the CONTML routine in the program PHYLIP.[2]

We applied principal components analysis (PCA) based on allele frequencies to visualize the data. Allele frequencies for each collection were arcsine-square-root transformed followed by the analysis in SYSTAT v.13 (SYSTAT Software Inc., Richmond, CA) to produce loadings of the components. We plotted the first and second, first and third, and first and fourth principal components with the sum of the products of the component loading and transformed allele frequencies.

Multidimensional scaling (MDS) is a multivariate method that is similar to PCA. We plotted CSE chord distance (Cavalli-Sforza and Edwards 1967) in a MDS plot with the package *rgl* in the software R.[3]

Results

Sample collections

For this study, we collected 3,665 samples of pink salmon from PWS (four hatcheries and 19 natural spawning areas) and KMA (one hatchery) between July and September in 2013 (Figure 1).

[2] Felsenstein J. 2005. PHYLIP (phylogeny inference package). Seattle (WA): Department of Genome Sciences. University of Washington.

[3] R Core Team. 2015. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/.

Laboratory

A total of 3,665 pink salmon from 24 locations were genotyped (Table 1).

Quality control

The total failure rate for genotyping was 13.5%. Most failures were caused by poor tissue quality or tissue contamination. Windy Creek had the highest failure rate (78.5%) for genotyping. Wilson Creek had the highest proportion of hatchery fish (59%; Figure 2). Both populations were not used in further analyses because they had relatively small sample sizes after removal of poor quality and hatchery samples. The following collections had individual fish with duplicate genotypes: Snug Harbor Creek (one pair), Totemoff Creek (one pair), Mink Creek (two pairs), Solomon Gulch Hatchery (one pair), and Lagoon Creek (three pairs). Duplicates appeared to have been the result of sampling the same fish into two consecutive wells or extracting DNA from the same fish twice. Quality control showed a low overall discrepancy rate of 0.24%. Most discrepancies were between homozygotes and heterozygotes.

Statistical analyses for population structure

A total of 2,954 pink salmon from 22 locations were available for statistical analyses after we removed first-generation hatchery fish (identified by their otolith marks) from collections taken from the natural spawning areas, natural fish without otolith samples, fish without genotypes, and duplicated fish (Table 1).

Within each of the following sites: Erb Creek, Olsen Creek, Koppen Creek, Hartney Creek, Rocky Creek, Armin F. Koernig Hatchery, Wally Noerenberg Hatchery, Solomon Gulch Hatchery, and Kitoi Bay Hatchery, we performed tests of homogeneity on the samples collected from different time. After adjusting for multiple tests, the results were not significant at the significance level of $\alpha = 0.05$ in each site except Koppen Creek, which was significant at only one locus. Therefore we pooled samples collected over time.

For all microsatellite markers and populations, eight of 352 tests deviated significantly from HWE ($P < 0.01$). These eight tests were spread over six microsatellite markers and no markers were out of HWE in more than three populations. No populations departed HWE at more than two markers. After adjusting for multiple testing, a single test remained significant (*Oki101* in Coghill River). We detected no linkage disequilibrium after adjustment for multiple testing.

The number of observed alleles (N_a) varied for the 16 microsatellite loci among PWS pink salmon. Locus *Ots7e* had the fewest number of alleles (10) and *Oki101* had the largest number of alleles (87; Table 3). The homogeneity tests for each individual locus across populations were significant ($P \leq 0.002$) except *One111* ($P = 0.348$). Overall F_{ST} was 0.002; the range of F_{ST} for each individual locus was between 0.001 and 0.003. The probability of F_{ST} at each locus was less than or equal to 0.003 except *One109* and *One111* (Table 3).

Population structure

The overall test of homogeneity on samples collected from PWS and KMA was significant ($P < 10^{-6}$) for all loci. After Kitoi Bay Hatchery was excluded, the test of homogeneity for all PWS populations remained significant ($P \leq 0.002$) except one locus. The overall test of homogeneity for all four hatchery populations from PWS was significant ($P < 10^{-6}$); only the tests at *Ots7e* and *One111* were not significant. The test of homogeneity was not significant ($P = 0.163$) between Armin F. Koernig Hatchery and Wally Noerenberg Hatchery.

We observed regional genetic differentiation. As expected, the largest difference in genetic differentiation was between PWS and KMA (F_{ST} = 0.005). The mean pairwise F_{ST} values ranged from 0.003 to 0.009 and probabilities of pairwise homogeneity test were all highly significant (Table 4).

Within PWS, pink salmon from Solomon Gulch Hatchery and Snug Harbor Creek were more genetically divergent from other locations; mean pairwise F_{ST} values ranged from 0.002 to 0.006. In the probabilities of pairwise homogeneity test, Snug Harbor Creek, Cannery Creek Hatchery, Solomon Gulch hatchery, and Kitoi Bay Hatchery (KMA) were more genetically different from other locations ($P < 0.0001$; Table 4).

A maximum likelihood tree was constructed to evaluate the patterns of the divergence among populations (Figure 3). The fish from Kitoi Bay Hatchery (KMA) were the most genetically distinct in the survey. In PWS, fish from Snug Harbor Creek, Coghill River, Lagoon Creek, and Canyon Creek were well separated from other populations.

PCA revealed a pattern similar to that of the maximum likelihood tree. The first two components explained 15.97% of the total variance. Both third and fourth components included 7.06% of the variance (Figures 4–6). The Kitoi Bay Hatchery (KMA) and the Solomon Gulch Hatchery were clearly divergent from all others. Snug Harbor Creek was isolated from other populations when we plotted PC1 with PC3 or PC4 (Figures 5–6). The fish from Lagoon Creek and Totemoff Creek were also separated from the central group with PC4 (Figure 6).

A MDS plot of the genetic variation among populations showed that the same five populations were separated from other populations as PCA (Figure 7). We removed the Kitoi Bay Hatchery (KMA), Solomon Gulch Hatchery, and Snug Harbor Creek populations and reconstructed a MDS plot (Figure 8). We observed two groups, demonstrating a general separation between populations from east and west sides of PWS. Among 16 loci, the tests of homogeneity indicated there were significant genetic difference between populations from east and west sides of PWS at 10 loci ($0 < P < 0.006$). After we removed hatchery populations, the difference remained significant between east and west side populations at four loci ($P < 0.005$).

Discussion

The primary purpose of this ongoing study is to collect and analyze genetic data for pink salmon to learn about the population genetic structure in PWS, Alaska. From those analyses, we expected to increase our understanding of the relationship among populations of fish spawning in natural and hatchery environments. This knowledge should provide baseline information for the project: Interactions of Wild and Hatchery Pink and Chum Salmon in Prince William Sound and Southeast Alaska. This information will be helpful for conservation and management decisions.

Limited studies preceded our research on even-year pink salmon population genetic structure in PWS (Seeb and Wishard 1977; Nickerson 1979; Seeb et al. 1999). In the late 1970s, allozyme studies indicated genetic differences existed between upstream and intertidal spawning areas as well as between early and late returns in some streams (Seeb and Wishard 1977; Nickerson 1979). In addition, Seeb et al. (1999) reported that Armin F. Koernig Hatchery differed little from most other streams, but that Solomon Gulch Hatchery was different from all streams except those in eastern PWS (Duck River, Millard Creek, Lagoon Creek, Olsen Creek, and Koppen Creek) (Seeb et al. 1999).

Population structure of 2013 collections

This report represents the examination of contemporary population structure of odd-year pink salmon spawning in PWS. We found that the proportion of diversity accounted for variation among populations relative to the total amount of variation was generally small (F_{ST}: 0.001–0.003) and in line with other studies over similar geographic ranges (Table 5). This measure indicates that odd-year pink salmon in PWS generally have shallow genetic structure. Shallow structure may be anticipated given the life-history of pink salmon: obligate 2-year life cycle, the short distance of freshwater migration, and the close proximity of spawning areas (Quinn 2005).

Although the population structure was shallow, significant variation was detected among populations. The largest genetic variation observed was between KMA and PWS area populations. The population of KMA provides context for the variation among populations within PWS. The water distance between KMA and PWS is about 450 km. The brood stock used for Kitoi Bay Hatchery (KMA) was from Big Kitoi Creek at the hatchery site. According to mean pairwise F_{ST}, pink salmon from Kitoi Bay Hatchery differed more genetically from locations in PWS. The signals detected by a maximum likelihood tree, PCA, and MDS plot also distinguished Kitoi Bay Hatchery from PWS. The relatively long geographic distance between those two regions may cause this difference and be indicative of the lack of introgression.

Within PWS populations, we observed that Solomon Gulch Hatchery was highly divergent. This is similar to the study of even-year pink salmon (Seeb et. al 1999). The progenitor broodstock of odd-year pink salmon for Solomon Gulch Hatchery was from Siwash Creek (Habicht et al. 2000). This creek is about five kilometer from the hatchery located at the end of Valdez Arm in northwestern PWS (Figure 1).

Among the most divergent natural collections within PWS, was the Snug Harbor Creek collection. This differentiation may be due to a combination of temporal genetic differentiation and lack of genetic introgression from hatchery fish for the early part of the run. This collection was one of the earliest collections sampled in 2013 (July 27th). Other studies have documented that early- and late-migrating pink salmon have significant genetic differences (McGregor et al. 1998; Kovach et al. 2013). In previous straying studies, otoliths from pink salmon were collected for up to 4 times, and included early and late-migrating fish (Brenner et al. 2012; Joyce and Evans 1999). The proportion of hatchery strays increased throughout the season and Snug Harbor Creek contained 26.5% hatchery strays in 1997 (Brenner et al. 2012). However, the proportion of hatchery fish in the Snug Harbor Creek collection was 0% in this study, which may reflect different sampling times of Snug Creek and hatchery broodstock. Given that the present study did not include other early-season collections, this finding may indicate that we may have missed detecting variation that is present in other early-run fish populations in PWS. This observation also suggests that the early-migrating fish in this creek may have maintained characteristics of the original stock, but a comparison to historical collections would be needed to confirm the extent to which this has occurred.

After we removed three outliers populations (Kitoi Bay Hatchery, Solomon Gulch Hatchery, and Snug Harbor Creek), we observed that some populations from eastern PWS are distinct from some western side populations in MDS plot (Figure 8). Lagoon Creek on the eastern side was distinct from the rest of the collections in the plot. Seeb et al. (1999) also observed that even-year pink salmon collection from upper Lagoon Creek was an outlier. Totemoff Creek, Paulson Creek, and Coghill River have affinity with most collections from western side.

Differences in geographic conditions between the eastern and western PWS may explain the genetic segregation of populations spawning between these areas. PWS has a long coastline with more than 1000 streams for pink salmon to spawn (Johnson and Coleman 2014). Streams in the eastern side tend to have longer upstream spawning areas and fish can swim farther upstream to spawn, whereas streams in western side are shorter and often have barriers near the stream mouth (Seeb et al. 1999). Fish may be better homing to similar habitat.

Relationships between hatchery and natural spawning areas

Our study included four pink salmon hatcheries located in PWS: Armin F. Koernig Hatchery, Wally Noerenberg Hatchery, Cannery Creek Hatchery, and Solomon Gulch Hatchery. From PCA results (Figure 4), we observed that Solomon Gulch Hatchery is the most distinct from other locations and the other three hatcheries are genetically closer to each other. The MDS plot (Figure 7) also shows the same pattern. The progenitor broodstock of odd-year pink salmon for Solomon Gulch Hatchery was from a creek located within the Valdez Arm (Habicht et al. 2000). This differentiation of Solomon Gulch Hatchery pink salmon from other populations examined in this study supports the hypothesis that Solomon Gulch Hatchery fish have not introgressed into streams outside of Valdez Arm nor been influenced by fish from outside the Arm. Examining allele frequencies for temporal stability (1990s to present) in this hatchery stock will provide additional information to assess this hypothesis.

Allele frequencies for fish from Armin F. Koernig Hatchery did not differ from natural spawning populations in PWS. Three hypotheses may explain the lack of divergence. First, the Armin F. Koernig Hatchery progenitors of odd-year pink salmon came from multiple sources including Ewan Bay (40 km to the north in southwest PWS), Larson Creek (the site of hatchery) and Crab Bay (five kilometers from the hatchery; Habicht et al. 2000). Second, Armin F. Koernig Hatchery is located in Sawmill Bay (Evans Island) in southwestern PWS, close to the channels through which natural pink salmon may pass as they return to their spawning areas (Templin et al. 1996). Fish caught in front of the hatchery were used for the annual broodstock (Habicht et al. 2000). Hatchery broodstock possibly includes both hatchery fish and non-hatchery fish. Third, high straying proportions of fish from Armin F. Koernig Hatchery have been documented throughout western PWS streams (Brenner et al. 2012) and these strays may have successfully introgressed with natural populations. Data from this study alone cannot distinguish among these hypotheses.

Broodstock for Wally Noerenberg Hatchery originated from Armin F. Koernig Hatchery (Habicht et al. 2000). Our observations show that Wally Noerenberg Hatchery fish are genetically similar to fish from Armin F. Koernig Hatchery, which is to be expected.

Broodstock for Cannery Creek Hatchery was obtained locally (Habicht et al. 2000). Odd-year fry from this hatchery were released at Derickson Bay and a few creeks off Eaglek Bay (Habicht et al. 2000). The MDS plot (Figure 8) places Cannery Creek Hatchery in the middle cluster, but separate from Armin F. Koernig Hatchery and Wally Noerenberg Hatchery.

Conclusions and Next Steps

Study of the population genetic structure of pink salmon in PWS is an initial step in the project examining interactions of wild and hatchery pink and chum salmon in PWS and Southeast Alaska. Our study showed that 1) the genetic structure exists among streams in PWS; 2) a hatchery (Solomon Gulch Hatchery) that used local stocks and is located far away from other

areas appeared to reflect their donors, receive few strays from other areas, and remain distinct; 3) there is no genetic difference in fish between Armin F. Koernig Hatchery and Wally Noerenberg Hatchery; 4) genetic factors possibly influence timing of fish return (Snug Harbor Creek) in PWS.

In the next phase of this study, we will expand upon this analysis to include data from an additional contemporary year (2015) and from historical years (1990s). Data from these years will enable 1) analysis of isolation by distance to see if the longer distances between streams correlate with genetic differences; 2) comparison between early run and late run in the same stream from 2015 and 1990s collections; 3) comparison of contemporary samples to archived samples from the 1990s to examine temporal stability of allele frequencies among pink salmon systems in PWS; 4) further testing of introgression of hatchery fish into populations spawning in natural streams.

Questions for the AHRP Science Panel

1. Are the proposed methods for population genetic structure analysis of 2013 data appropriate and sufficient?
2. Are there any other analysis methods that should be applied for 2013 data?
3. Are there any suggestions for the odd-year analysis methods that will also include 2015 and 1990s data?
4. Are there any suggestions for the even-year analysis methods that will include 2014 and 1990s data?
5. Are there any suggestions for the analysis methods of comparing genetic variation between 1990s data and contemporary data?
6. Are there any suggestions for comparing genetic variation between odd-year and even-year data?

AHRP Science Panel Review and Comments

This technical document has been reviewed by email and preliminary results were presented at the March 5, 2016 meeting of the AHRG.

This document covers initial results of stock structure work requested by the AHRG. There were no comments from the AHRG but results will certainly be discussed at a future meeting.

This document is acceptable to the AHRG.

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Tables and Figures

Table 1.–Pink salmon collections by region and location from Prince William Sound and Kitoi Bay Hatchery in 2013. For each collection, collection type (hatchery (H), intertidal (I), or upstream (U)), collection date and number of fish analyzed are shown. Map numbers correspond to map numbers in Figures 1 and 3. After pooling collections into populations (see text for details), final collection sizes and hatchery proportions are shown (NA means not applicable).

				Anadromous Waters			No. of individuals for		
Map No.	Region	Area	Location	Catalog Number	Collection Type	Date	Genotype	Statistical Analysis	Hatchery %
1	Prince William Sound	Southwestern	Armin F. Koernig H.	NA	H	8/22	50	47	NA
1					H	8/24	50	49	
1					H	8/27	50	45	
1					H	8/30	50	49	
2			Wilson Cr.	226-40-16770	I	8/27	96	0	59%
3			Snug Harbor Cr.	226-30-16820	U	7/27	96	80	0%
4			Totemoff Cr.	226-20-16210	U	8/27	96	65	11%
5			Erb Cr.	226-20-16040	U	9/2	83	75	17%
5					U	9/6	19	7	
5					U	9/7	79	43	
6		Northern	Mink Cr.	224-40-14800	U	8/13	160	143	1%
7			Paulson Cr.	224-10-14550	U	8/28	120	75	4%
8			Swanson Cr.	224-10-14320	U	8/12	121	104	2%
9			Coghill River	223-30-13220	U	8/19	120	115	0%
10			Wally Noerenberg H.	NA	H	8/21	51	51	NA
10					H	8/23	54	53	
10					H	8/26	50	49	
10					H	8/29	51	51	
11			Cannery Cr. H.	NA	H	8/25	51	50	NA
11					H	8/27	49	48	
11					H	8/30	48	47	
11					H	9/2	49	49	
12		Eastern	Solomon Gulch H.	NA	H	8/6	50	25	NA
12					H	8/12	50	20	

-continued-

554 Table 1.–Page 2 of 2.

Map No.	Region	Area	Location	Anadromous Waters Catalog Number	Collection Type	Date	No. of individuals for Genotype	No. of individuals for Statistical Analysis	Hatchery %
12					H	8/16	50	35	
12					H	8/21	50	37	
13			Duck River	221-50-11160	U	8/18	151	125	1%
14			Lagoon Cr.	221-40-10990	U	8/17	121	82	2%
15			Olsen Cr.	221-30-10517	U	8/6	96	84	0%
15					U	8/16	112	84	0%
16			Koppen Cr.	221-20-10350	U	7/30	96	86	0%
16					U	8/16	120	101	0%
17		Southeastern	Humpback Cr.		U	8/26	118	102	3%
18			Windy Cr.(Bernard Cr.)	228-30-18610	U	8/15	121	0	0%
19			Hartney Cr.	221-10-10020	U	8/3	80	79	1%
19					U	8/5	48	48	0%
19					U	8/14	142	136	1%
20			Canyon Cr.	228-30-18510	U	7/31	96	84	0%
21			Constantine Cr.	228-60-18150	U	8/14	120	119	0%
22		Montague	Rocky Cr.	227-20-17590	I	8/13	88	81	5%
22					I	8/14	43	36	
23			McCleod Cr.	227-10-17060	U	8/26	120	101	2%
24	Kodiak	Afognak	Kitoi Bay H.	NA	H	9/11	100	97	NA
24					H	9/18	100	97	
						Total	3665	2954	

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Table 2.–Microsatellite loci surveyed in pink salmon from Prince William Sound and Kitoi Bay Hatchery in 2013. Each locus name, range of allele sizes, annealing and extension temperatures, times (seconds), the number of PCR amplification, and the 3730 Electrophoresis Plex is shown.

Locus *	Size Range (base pairs)	Annealing	Extension	Cycles	3730 Electrophoresis Plex
Oki10	100-380	50°C/30s	72°C/30s	30	2
Oki101	160-510	53°C/45s	68°C/30s	37	2
One101	130-411	50°C/30s	70°C/30s	43	3
One102	247-393	50°C/30s	70°C/30s	43	3
One104	110-280	50°C/30s	70°C/30s	26	3
One109	96-230	55°C/30s	72°C/30s	26	1
One111	100-270	50°C/30s	72°C/30s	30	2
One114	100-290	50°C/45s	70°C/45s	26	3
Ots213	200-500	50°C/30s	72°C/45s	34	1
Ots7e	220-270	50°C/45s	68°C/45s	35	1
OtsG253b	140-400	60°C/45s	72°C/45s	27	2
OtsG311	150-280	50°C/45s	68°C/45s	35	1
OtsG68	130-270	50°C/30s	70°C/30s	26	3
Ssa407	264-472	60°C/30s	70°C/30s	32	3
Ssa408	270-600	59°C/30s	70°C/60s	34	1
Ssa419	260-630	50°C/30s	72°C/45s	34	1

* The sequences of primers are from Beacham et al. (2012).

562 Table 3.–Number of alleles per locus, the probability of homogeneity test (*P*-value) across all
563 populations, an index of genetic differentiation F_{ST}, the probability of F_{ST} for 16 microsatellite loci among
564 Prince William Sound pink salmon sampled in 2013.

Locus	Number of alleles	Probability of homogeneity test (*P*-value)	F_{ST}	Probability of F_{ST}
Oki10	73	<0.001	0.002	<0.001
Oki101	87	<0.001	0.001	<0.001
One101	43	<0.001	0.002	<0.001
One102	29	<0.001	0.001	<0.001
One104	37	<0.001	0.002	<0.001
One109	21	0.002	0.001	0.068
One111	23	0.348	0.000	0.687
One114	38	<0.001	0.001	<0.001
Ots213	67	<0.001	0.001	<0.001
Ots7e	10	<0.001	0.003	0.003
OtsG253b	44	<0.001	0.002	<0.001
OtsG311	28	<0.001	0.001	<0.001
OtsG68	32	<0.001	0.002	<0.001
Ssa407	48	<0.001	0.001	0.001
Ssa408	61	<0.001	0.001	<0.001
Ssa419	78	<0.001	0.001	<0.001

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Table 4.– Mean pairwise F_{ST} values and probabilities of homogeneity test for Prince William Sound and Kitoi Bay Hatchery pink salmon sampled in 2013. Estimates are based on 16 microsatellite loci. Location codes (LC) are as follows: 1) Armin F. Koernig H., 2) Snug Harbor Cr., 3) Totemoff Cr., 4) Erb Cr., 5) Mink Cr., 6) Paulson Cr., 7) Swanson Cr. , 8) Coghill R. , 9) Wally Noerenberg H., 10) Cannery Cr. H., 11) Solomon Gulch H., 12) Duck R. , 13) Lagoon Cr., 14) Olsen Cr. , 15) Koppen Cr., 16) Humpback Cr. , 17) Hartney Cr., 18) Canyon Cr., 19) Constantine Cr. , 20) Rocky Cr., 21) McCleod Cr., 22) Kitoi Bay H. F_{ST} values are listed below the diagonal and the values of F_{ST} greater than 0.0030 are highlighted in grey. The probabilities of homogeneity tests are shown above the diagonal and values less than 0.0001 is highlighted in grey.

LC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1		<0.0001	0.0030	0.1460	<0.0001	0.0154	<0.0001	<0.0001	0.1621	<0.0001	<0.0001	0.0017	0.0006	0.0001	<0.0001	0.1598	0.0132	0.0641	0.2529	0.3115	0.0131	<0.0001
2	0.0032		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
3	0.0009	0.0030		0.0491	0.0013	0.3099	0.0021	0.0013	0.0069	<0.0001	<0.0001	0.0710	<0.0001	0.0026	0.0439	0.0037	0.0675	0.2657	0.1173	0.0321	0.2407	<0.0001
4	0.0005	0.0031	0.0011		0.2181	0.5491	0.0065	0.1073	0.0276	<0.0001	<0.0001	0.2359	<0.0001	0.0074	0.0001	0.4951	0.1447	0.1492	0.3527	0.7848	0.7912	<0.0001
5	0.0007	0.0037	0.0016	0.0001		0.3197	0.0002	<0.0001	0.0007	<0.0001	<0.0001	0.0543	<0.0001	0.0004	<0.0001	0.0085	0.0030	0.0159	0.3315	0.0450	0.2915	<0.0001
6	0.0009	0.0026	0.0002	-0.0001	-0.0001		0.0087	0.0027	0.0201	<0.0001	<0.0001	0.3117	0.0058	0.0897	0.0001	0.4128	0.1964	0.2156	0.4294	0.5112	0.2801	<0.0001
7	0.0014	0.0057	0.0021	0.0014	0.0010	0.0011		<0.0001	0.0005	<0.0001	<0.0001	0.0512	0.0001	<0.0001	<0.0001	0.0035	0.0026	0.0050	0.0043	0.0001	0.0433	<0.0001
8	0.0013	0.0035	0.0006	0.0003	0.0016	0.0006	0.0028		<0.0001	<0.0001	<0.0001	0.0006	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0024	0.0005	<0.0001
9	0.0004	0.0037	0.0011	0.0004	0.0005	0.0004	0.0019	0.0013		<0.0001	<0.0001	0.0002	0.0001	<0.0001	<0.0001	0.0165	0.0001	0.0039	0.0278	0.4295	0.2343	<0.0001
10	0.0020	0.0048	0.0023	0.0019	0.0020	0.0020	0.0026	0.0031	0.0024		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
11	0.0045	0.0059	0.0045	0.0050	0.0040	0.0042	0.0049	0.0048	0.0050	0.0062		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
12	0.0009	0.0038	0.0011	0.0006	0.0007	0.0008	0.0008	0.0013	0.0015	0.0011	0.0040		0.0006	0.6544	0.0711	0.4312	0.4820	0.4888	0.5350	0.2129	0.8305	<0.0001
13	0.0016	0.0045	0.0025	0.0020	0.0013	0.0009	0.0017	0.0028	0.0015	0.0032	0.0045	0.0013		0.0009	0.0001	0.0067	0.0003	0.0153	0.1584	0.0084	0.0001	<0.0001
14	0.0008	0.0031	0.0007	0.0007	0.0008	0.0003	0.0017	0.0013	0.0010	0.0026	0.0020	0.0001	0.0010		0.2717	0.1223	0.0013	0.0674	0.3918	0.2010	0.0506	<0.0001
15	0.0014	0.0027	0.0009	0.0012	0.0012	0.0011	0.0024	0.0016	0.0015	0.0028	0.0028	0.0007	0.0015	0.0001		0.0057	0.0001	0.1356	0.0002	0.0015	0.0015	<0.0001
16	0.0000	0.0029	0.0007	-0.0001	0.0003	-0.0004	0.0003	0.0013	0.0006	0.0019	0.0038	0.0001	0.0007	0.0002	0.0009		0.2562	0.7014	0.7206	0.3559	0.0580	<0.0001
17	0.0005	0.0032	0.0011	0.0003	0.0005	0.0003	0.0013	0.0011	0.0007	0.0021	0.0034	0.0002	0.0011	0.0004	0.0009	0.0001		0.4012	0.0216	0.2307	0.2094	<0.0001
18	0.0004	0.0031	0.0001	0.0004	0.0006	-0.0002	0.0015	0.0010	0.0011	0.0020	0.0044	0.0004	0.0008	0.0005	0.0006	-0.0001	0.0001		0.5386	0.9272	0.6976	<0.0001
19	0.0002	0.0034	0.0008	-0.0001	0.0000	-0.0005	0.0008	0.0010	0.0004	0.0015	0.0043	-0.0001	0.0001	-0.0002	0.0007	-0.0007	0.0001	0.0001		0.5633	0.6968	<0.0001
20	0.0000	0.0030	0.0009	-0.0003	0.0002	0.0000	0.0018	0.0009	0.0000	0.0021	0.0041	0.0007	0.0012	0.0005	0.0011	-0.0001	0.0001	-0.0006	-0.0002		0.6168	<0.0001
21	0.0004	0.0033	0.0006	-0.0002	0.0004	0.0005	0.0007	0.0015	0.0000	0.0012	0.0042	-0.0002	0.0016	0.0005	0.0011	0.0004	0.0000	0.0000	-0.0004	-0.0001		<0.0001
22	0.0055	0.0062	0.0034	0.0044	0.0058	0.0046	0.0077	0.0054	0.0053	0.0072	0.0092	0.0054	0.0077	0.0053	0.0050	0.0053	0.0048	0.0045	0.0057	0.0051	0.0048	

Table 5.– Comparison of fixation indices (F_{ST}) reported in published studies of pink salmon.

Study	F_{ST} (range)	Location	Lineage	Pops/Sites	Spatial scale (km)	Marker type (loci)
Hawkins et al. 2002	0.000	AK	odd	6	~1–10	Allozyme
Hawkins et al. 2002	0.001	Kamchatka and northern Okhotsk Sea	odd	14	~10–3000	Allozyme
Noll et al. 2001	0.001	south Sakhalin	even	4	~10–350	Allozyme
Cheng et al. (this study)	0.002 (0.001–0.003)	Prince William Sound, AK	odd	22	~10–200	Microsatellite
Noll et al. 2001	0.002	southern Okhotsk Sea	even	6	~10–700	Allozyme
Noll et al. 2001	0.002	Hokkaido	even	2	~30–500	Allozyme
Beacham et al. 2012	0.005 (odd yr) 0.002 (even yr)	BC and WA	even and odd	146 (odd yr) 116 (even yr)	~1400	Microsatellite
Hawkins et al. 2002	0.005	Sakhalin, Kuril, and Hokkaido	odd	11	~10–700	Allozyme
Noll et al. 2001	0.005	eastern Kamchatka	even	2	~5	Allozyme
Hawkins et al. 2002	0.006	Asia	odd	25	~10–3700	Allozyme
Varnavskaya and Beacham 1992	<0.006 (0.00–0.006)	Kamchatka, Russia	odd	8	~50–6000	Allozyme
Seeb et al. 1999	0.007 (0.004–0.012)	Prince William Sound, AK	even	22	~10–200	Allozyme
Noll et al. 2001	0.008	western Kamchatka	even	5	~10–500	Allozyme
Shaklee and Varnavskaya 1994	0.008	Russia	odd	8	~50–3500	Allozyme
Noll et al. 2001	0.009	AK	even	5	~1–10	Allozyme
Hawkins et al. 2002	0.013	Asia	even	13	150–2000	Allozyme
Noll et al. 2001	0.015	Asia	even	13	~10–3700	Allozyme
Beacham et al. 1988	0.019 (0.000–0.059)	BC	even and odd	84	~1–1400	Allozyme
Olsen et al. 2000b	0.020 (0–0.098)	Dungeness, WA	odd	2	~15	Allozyme and Microsatellite
Olsen et al. 1998b	0.022 (0.007–0.058)	AK, BC, and WA	odd	12	~50–4700	Microsatellite
Noll et al. 2001	0.028	AK and Asia	even	18	~10–5000	Allozyme
Gharrett et al. 1988	0.036	AK	even	19	~50–2500	Allozyme
Hawkins et al. 2002	0.051	AK and Asia	odd	31	~10–5000	Allozyme

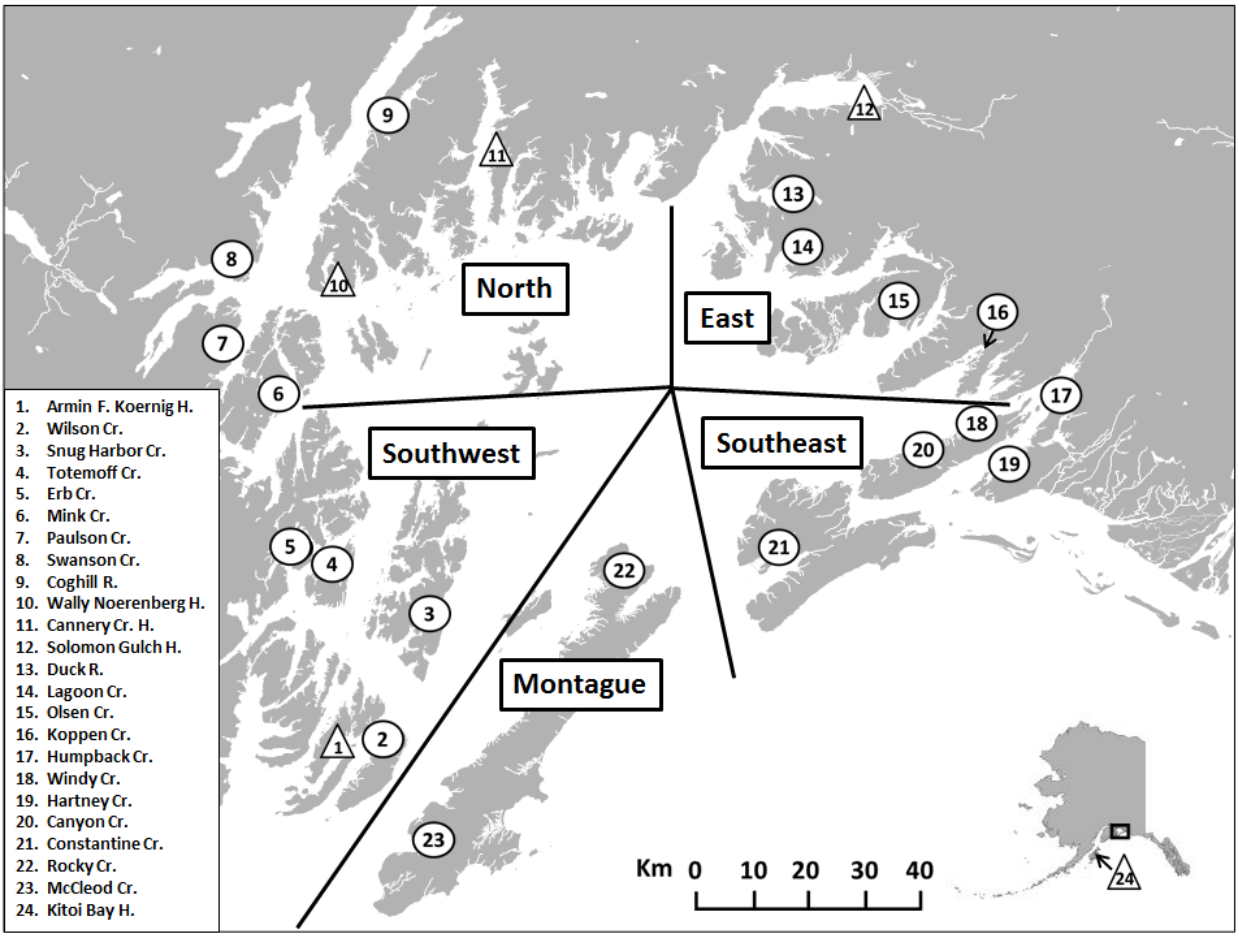
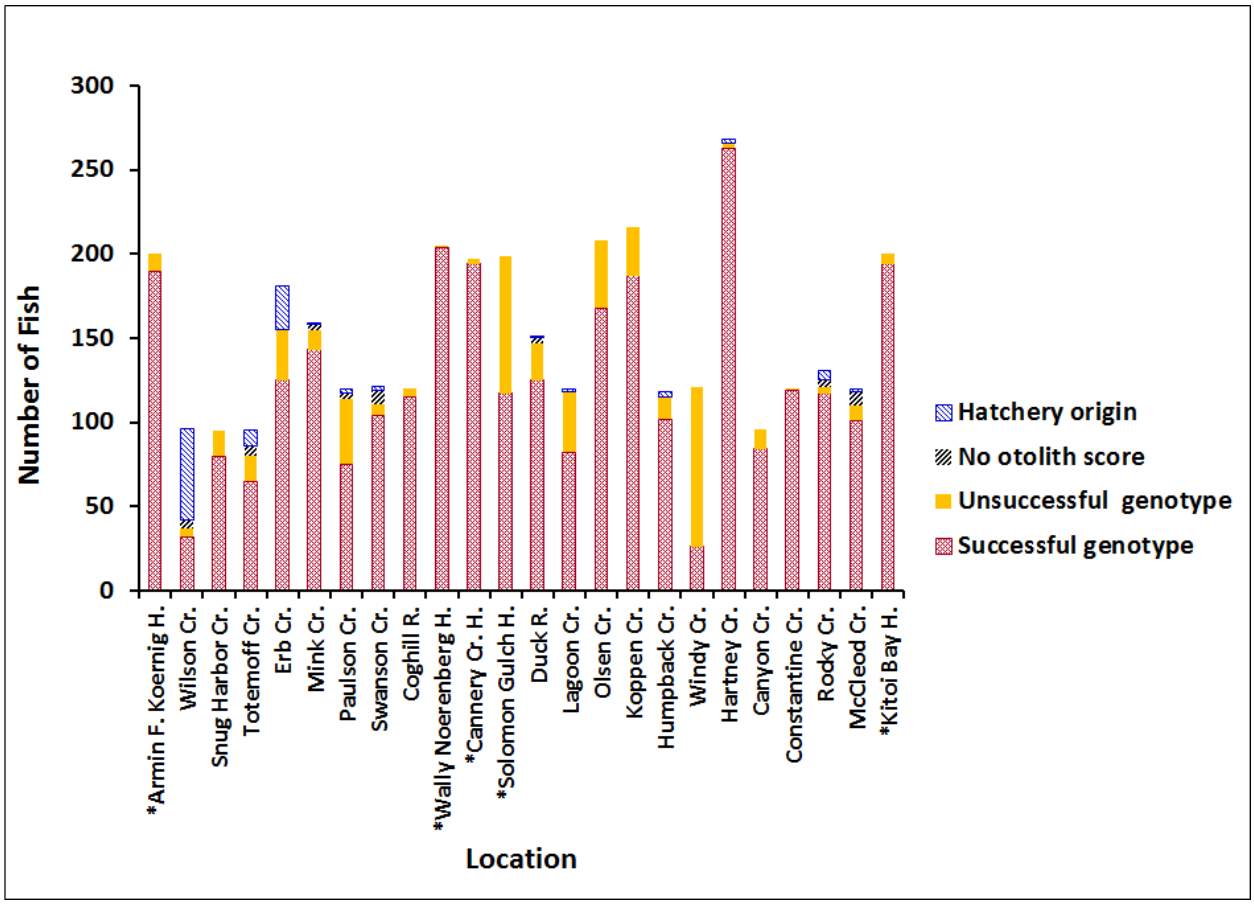


Figure 1– Locations of pink salmon collections from five areas in Prince William Sound (PWS) and Kitoi Bay Hatchery in 2013. Western PWS includes North, Southwest, and Montague regions. Eastern PWS includes East and Southeast regions. Triangles indicate hatchery locations and circles indicate natural spawning areas. Information for each collection is provided in Table 1.

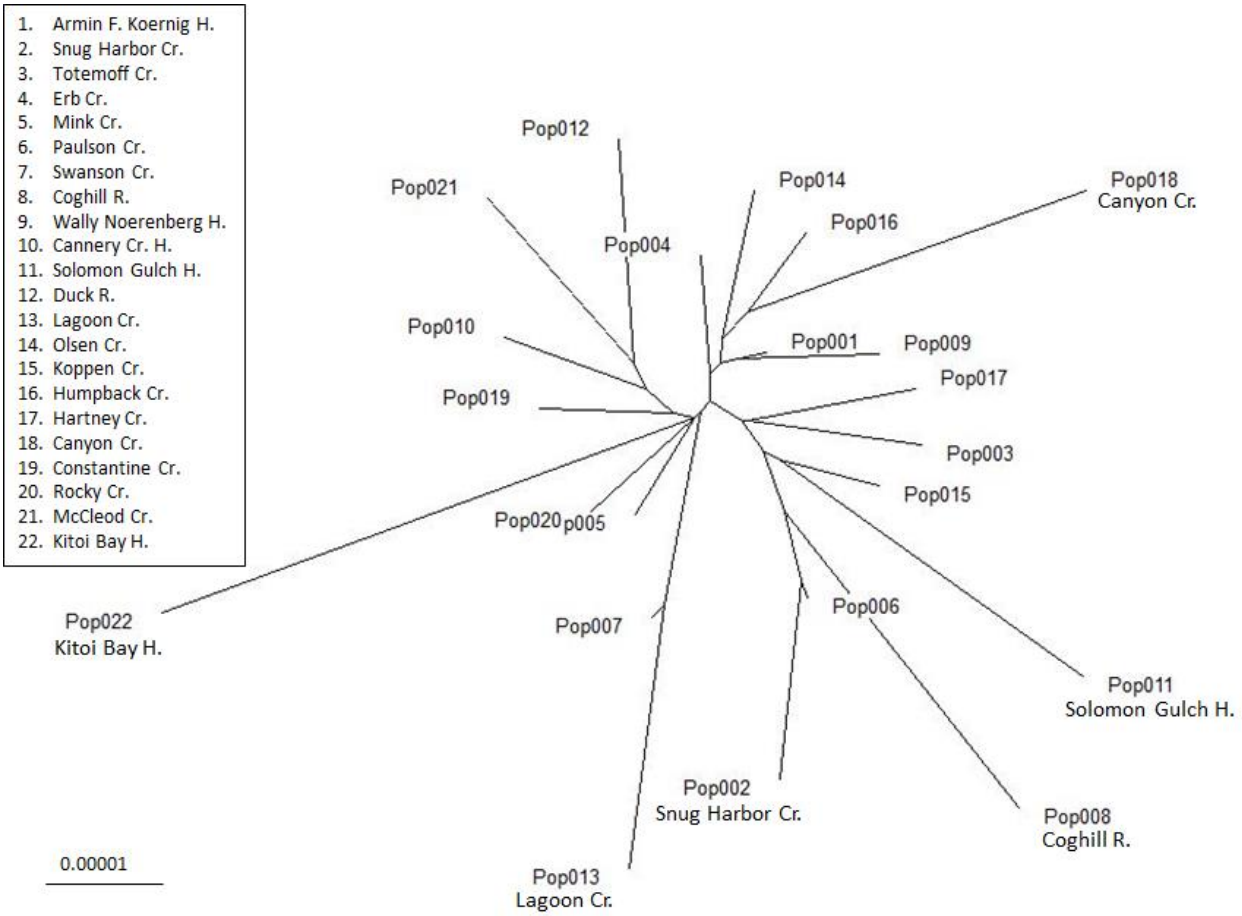


584

585 Figure 2.–Number of pink salmon used for genotyping from samples collected during 2013 in Prince
586 William Sound and at Kitoi Bay Hatchery. Hatchery locations have an asterisk (*). Sixteen microsatellite
587 loci were used for genotyping.

588

589



590

591 Figure 3.–A maximum-likelihood tree for collections of pink salmon from Prince William Sound and
592 Kitoi Bay Hatchery in 2013. The tree was constructed from chord distances of microsatellite data
593 (Cavalli-Sforza and Edwards 1967) with the CONTML program (PHYLIP; See text).

594

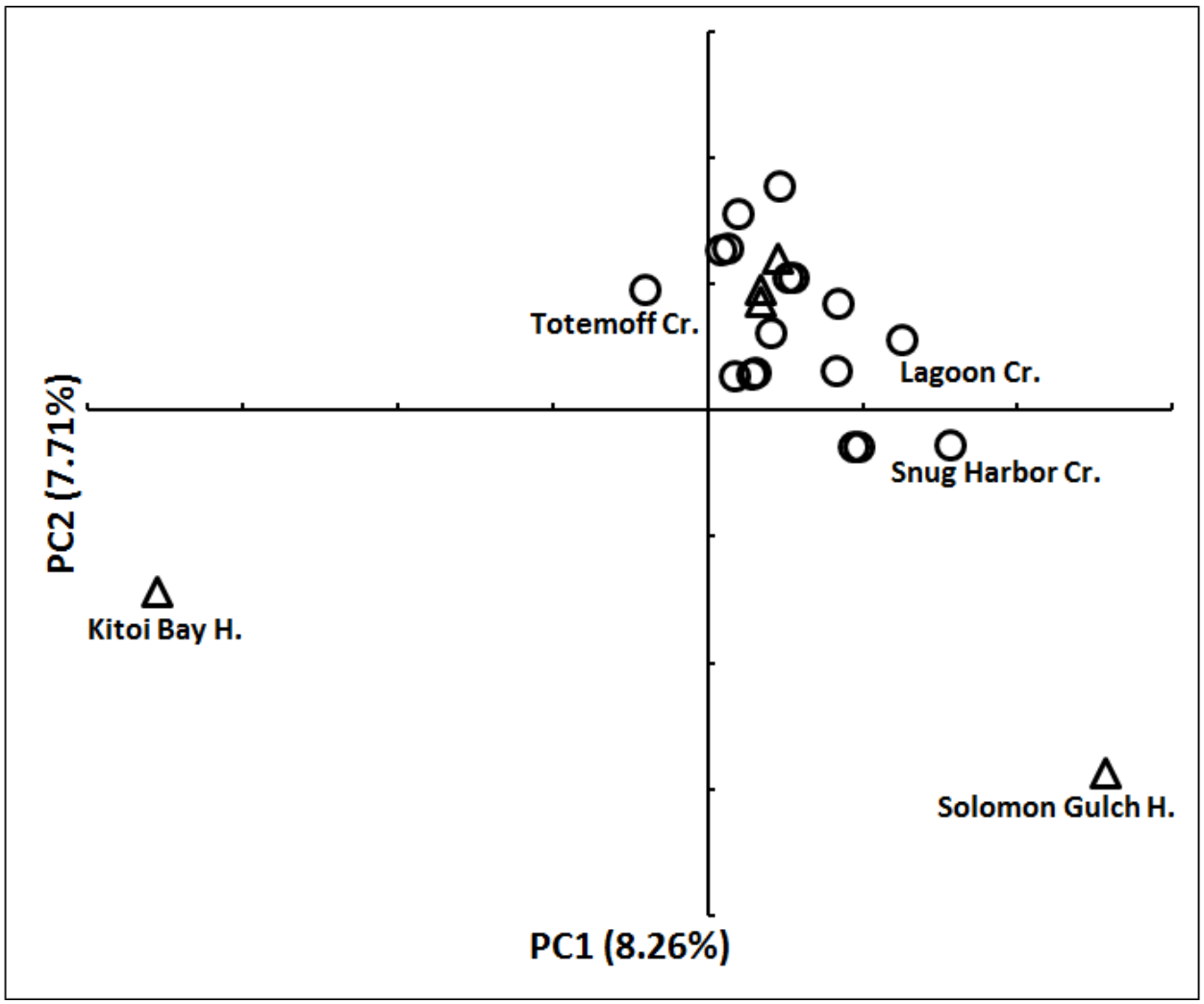


Figure 4.–Plot of principal components 1 (PC1) and 2 (PC2) of microsatellite allele frequency data of pink salmon from Prince William Sound and Kitoi Bay Hatchery in 2013. Triangles indicate hatchery locations, circles indicate natural spawning areas.

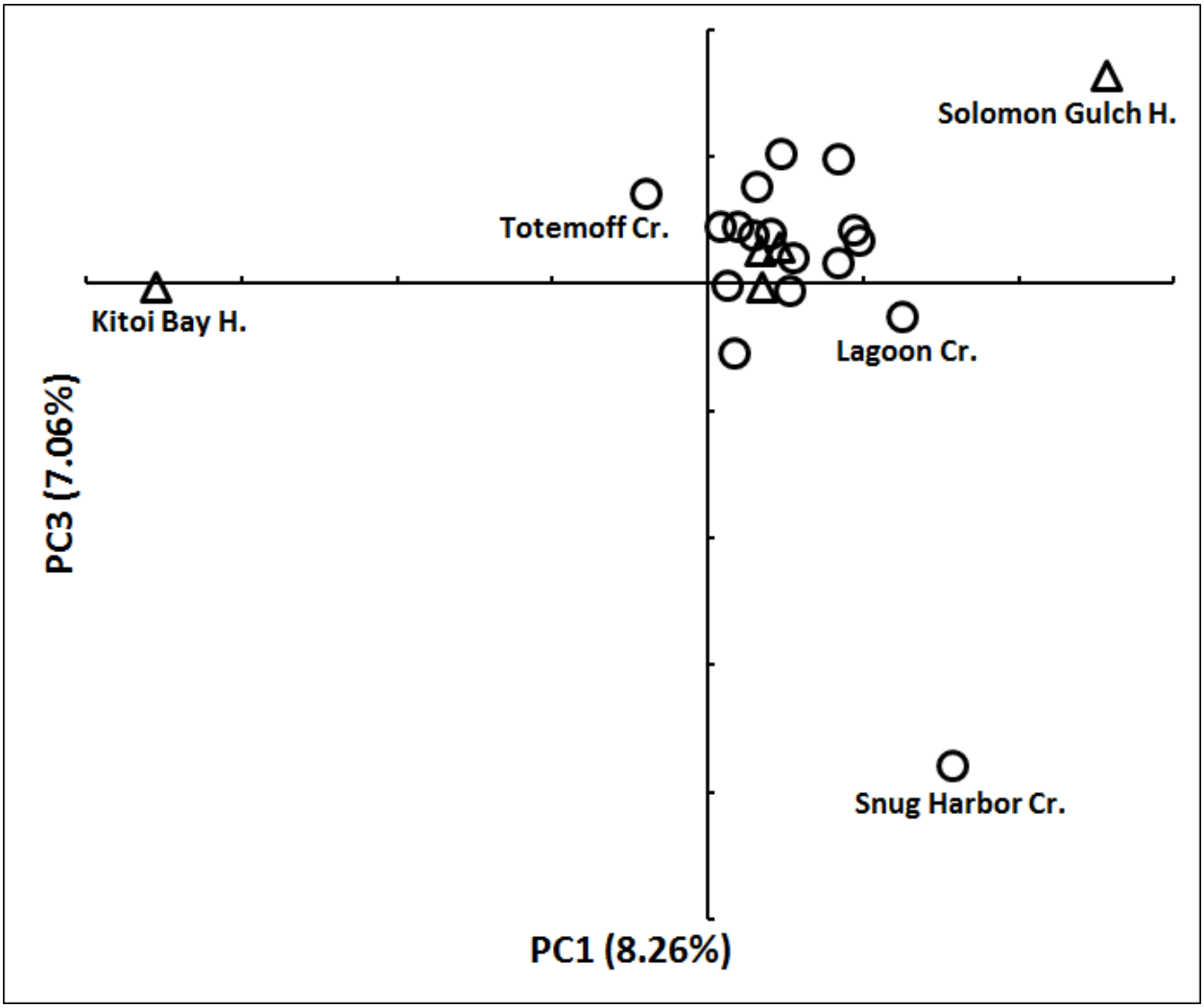
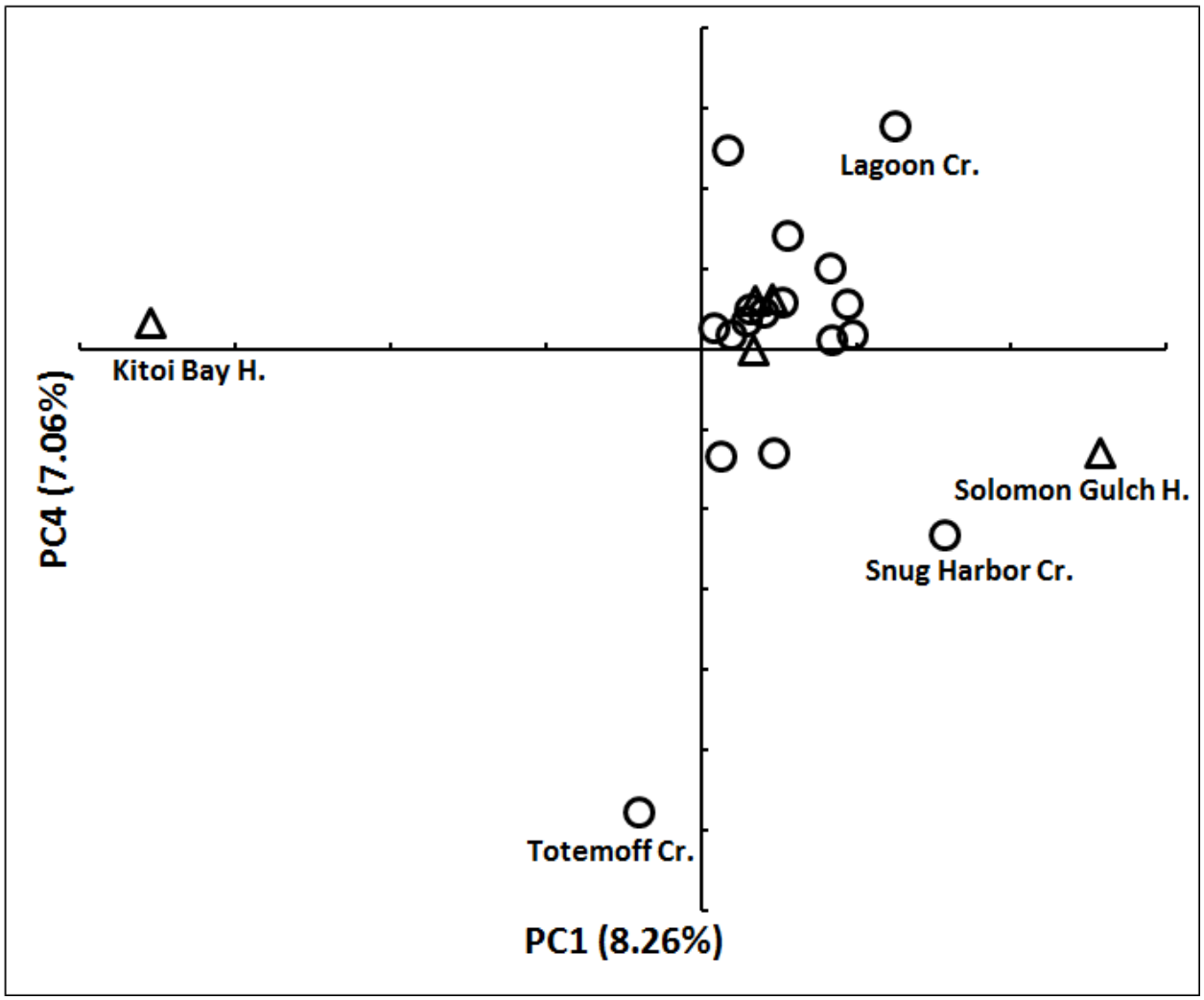


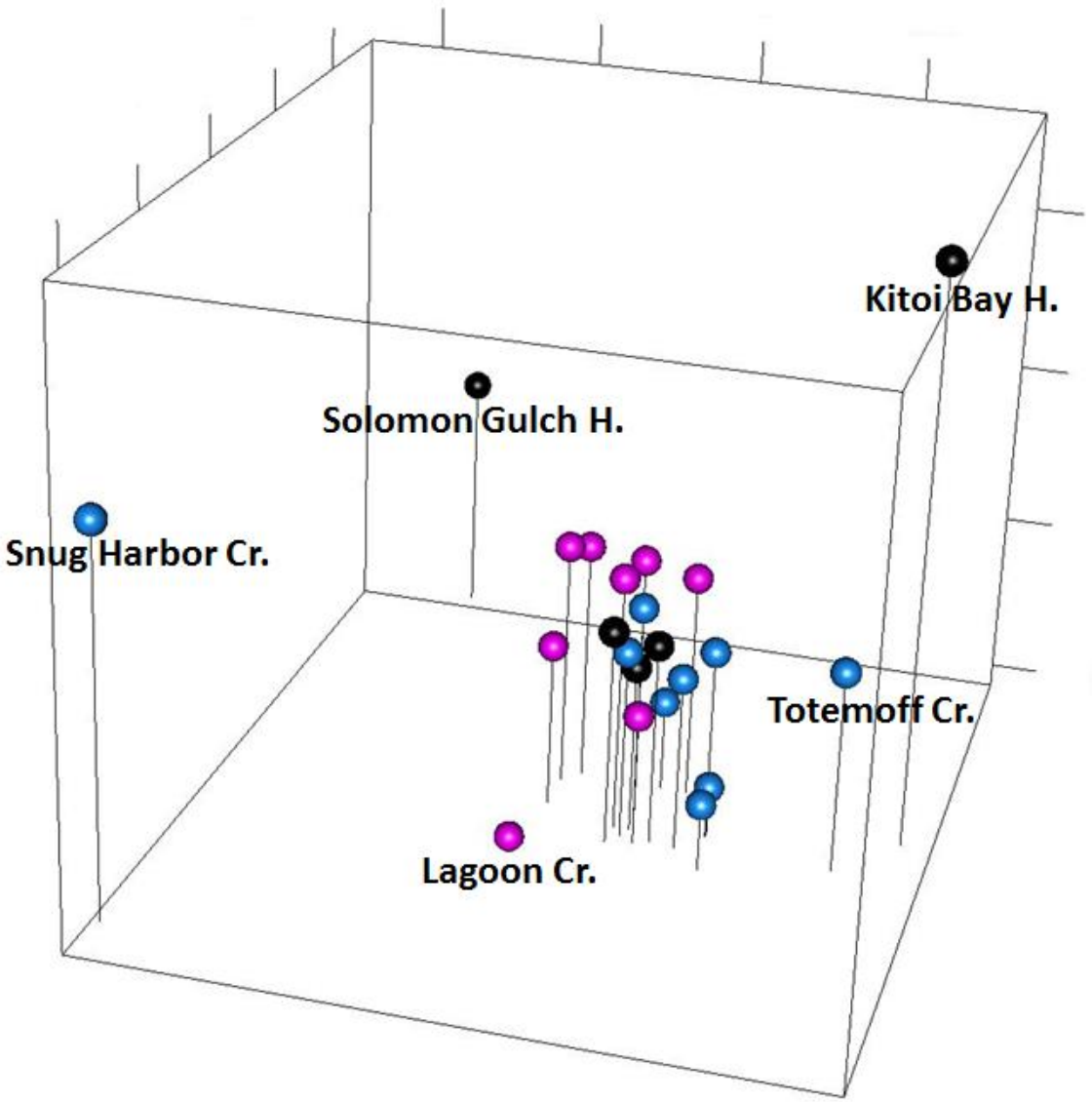
Figure 5.–Plot of principal components 1 (PC1) and 3 (PC3) of microsatellite allele frequency data of pink salmon from Prince William Sound and Kitoi Bay Hatchery in 2013. Triangles indicate hatchery locations and circles indicate natural spawning areas.



607

608 Figure 6.–Plot of principal components 1 (PC1) and 4 (PC4) of microsatellite allele frequency data of
609 pink salmon from Prince William Sound and Kitoi Bay Hatchery in 2013. Triangles indicate hatchery
610 locations and circles indicate natural spawning areas.

611



612

613 Figure 7.–Multidimensional scaling (MDS) based on chord distances (Cavalli-Sforza and Edwards
614 1967) for pink salmon collections from Prince William Sound and Kitoi Bay Hatchery in 2013. Pink
615 circles represent collections from east side creeks; light blue circles represent collections from westside
616 creeks; black circles represent hatchery collections.

617

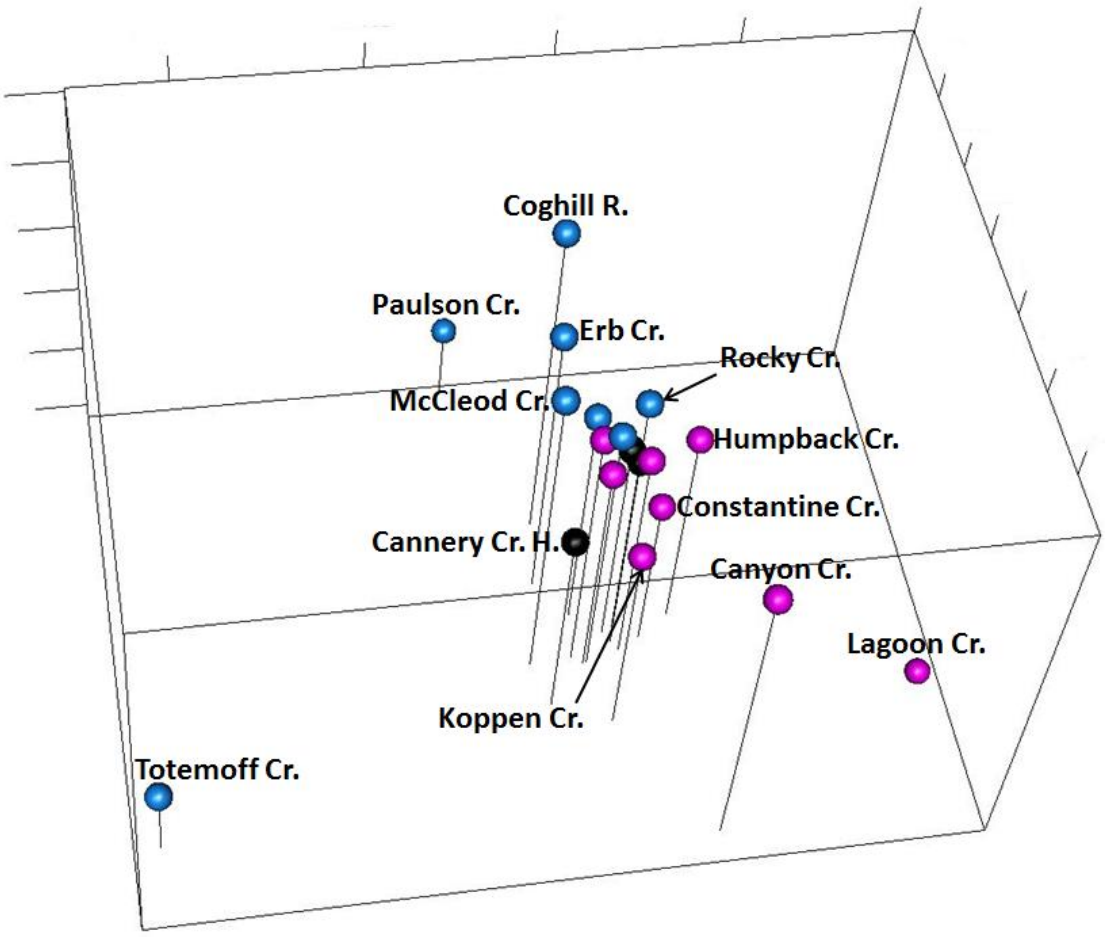


Figure 8.–Multidimensional scaling (MDS) based on chord distances (Cavalli-Sforza and Edwards 1967) for pink salmon collections from Prince William Sound in 2013. As outliers, the collections from Kitoi Bay Hatchery, Solomon Gulch Hatchery, and Snug Harbor Creek are removed from Figure 7. Pink circles represent collections from east side creeks; light blue circles represent collections from westside creeks; black circles represent hatchery collections.

APPENDIX A: ALLELE FREQUENCIES

Appendix A1.– Allele frequencies for 16 microsatellite lock surveyed in pink salmon collections from Prince William Sound and Kitoi Bay Hatchery in 2013. n indicates fish number (row).Locations are as follows: 1) Armin F. Koernig H., 2) Snug Harbor Cr., 3) Totemoff Cr., 4) Erb Cr., 5) Mink Cr., 6) Paulson Cr., 7) Swanson Cr. , 8) Coghill R., 9) Wally Noerenberg H., 10) Cannery Cr. H., 11) Solomon Gulch H., 12) Duck R., 13) Lagoon Cr., 14) Olsen Cr. , 15) Koppen Cr., 16) Humpback Cr. , 17) Hartney Cr., 18) Canyon Cr., 19) Constantine Cr. , 20) Rocky Cr., 21) McCleod Cr., and 22) Kitoi Bay H.

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Locus: *Oki10*																						
n	190	75	65	125	143	75	101	114	203	191	117	123	82	165	187	102	256	84	119	115	100	188
104	0.003	0.000	0.000	0.004	0.000	0.000	0.005	0.000	0.002	0.000	0.013	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.004	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
164	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
168	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
172	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
176	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.000
180	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.005	0.000
184	0.003	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.003
188	0.005	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.012	0.009	0.003	0.015	0.002	0.000	0.004	0.004	0.005	0.000
192	0.008	0.020	0.000	0.012	0.010	0.000	0.000	0.004	0.000	0.003	0.013	0.008	0.018	0.009	0.011	0.005	0.014	0.024	0.013	0.004	0.000	0.016
196	0.005	0.007	0.000	0.012	0.007	0.007	0.000	0.009	0.010	0.000	0.000	0.004	0.012	0.006	0.003	0.020	0.002	0.006	0.017	0.017	0.000	0.043
200	0.005	0.013	0.015	0.008	0.010	0.053	0.015	0.013	0.007	0.008	0.000	0.033	0.006	0.006	0.005	0.020	0.016	0.018	0.029	0.026	0.010	0.013
204	0.021	0.033	0.023	0.036	0.028	0.047	0.030	0.035	0.005	0.052	0.051	0.033	0.000	0.033	0.019	0.025	0.012	0.012	0.021	0.022	0.010	0.029
208	0.024	0.000	0.038	0.024	0.031	0.020	0.025	0.026	0.010	0.008	0.026	0.016	0.000	0.039	0.016	0.005	0.020	0.006	0.034	0.017	0.030	0.008
212	0.021	0.013	0.015	0.024	0.021	0.020	0.045	0.026	0.042	0.031	0.000	0.020	0.024	0.027	0.021	0.029	0.012	0.018	0.034	0.030	0.030	0.027
216	0.045	0.067	0.069	0.052	0.045	0.013	0.045	0.022	0.039	0.024	0.026	0.020	0.055	0.027	0.029	0.039	0.027	0.018	0.029	0.013	0.055	0.045
220	0.037	0.033	0.092	0.036	0.038	0.067	0.050	0.075	0.052	0.076	0.030	0.037	0.043	0.061	0.064	0.020	0.037	0.030	0.067	0.017	0.045	0.021
222	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
224	0.034	0.060	0.015	0.056	0.045	0.027	0.079	0.031	0.052	0.050	0.094	0.041	0.049	0.061	0.051	0.054	0.061	0.042	0.080	0.061	0.070	0.040
226	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.009	0.002	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
228	0.068	0.053	0.069	0.060	0.070	0.047	0.040	0.092	0.067	0.081	0.162	0.098	0.091	0.103	0.123	0.059	0.086	0.095	0.084	0.087	0.070	0.080
230	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.004	0.005	0.000	0.000	0.000	0.006	0.006	0.003	0.005	0.000	0.000	0.000	0.000	0.005	0.000

-continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
232	0.076	0.080	0.069	0.112	0.080	0.100	0.054	0.118	0.067	0.045	0.047	0.053	0.085	0.048	0.045	0.083	0.072	0.077	0.076	0.074	0.040	0.082
234	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
236	0.066	0.067	0.038	0.084	0.091	0.060	0.050	0.101	0.069	0.073	0.047	0.061	0.037	0.070	0.088	0.059	0.057	0.054	0.050	0.078	0.040	0.027
238	0.000	0.000	0.000	0.000	0.007	0.007	0.000	0.000	0.002	0.003	0.000	0.000	0.000	0.000	0.003	0.000	0.002	0.000	0.000	0.000	0.005	0.003
240	0.092	0.053	0.092	0.064	0.101	0.087	0.059	0.057	0.094	0.102	0.060	0.085	0.055	0.045	0.061	0.069	0.076	0.101	0.055	0.126	0.060	0.059
242	0.003	0.000	0.000	0.000	0.003	0.007	0.000	0.000	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.003
244	0.095	0.073	0.085	0.096	0.049	0.067	0.114	0.044	0.069	0.113	0.051	0.053	0.055	0.033	0.088	0.108	0.078	0.077	0.067	0.065	0.090	0.085
246	0.000	0.000	0.008	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.009	0.012	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.005	0.003
248	0.089	0.047	0.085	0.044	0.066	0.060	0.059	0.079	0.084	0.079	0.060	0.077	0.049	0.055	0.035	0.044	0.068	0.065	0.063	0.083	0.095	0.088
250	0.000	0.000	0.000	0.004	0.000	0.007	0.000	0.000	0.005	0.008	0.000	0.000	0.006	0.003	0.000	0.000	0.004	0.000	0.000	0.009	0.000	0.003
252	0.039	0.093	0.069	0.036	0.042	0.060	0.040	0.048	0.052	0.047	0.051	0.077	0.061	0.039	0.064	0.064	0.064	0.077	0.046	0.057	0.050	0.077
254	0.013	0.013	0.015	0.012	0.007	0.020	0.005	0.000	0.010	0.003	0.013	0.004	0.012	0.012	0.008	0.005	0.006	0.000	0.004	0.013	0.010	0.003
256	0.039	0.067	0.054	0.016	0.035	0.047	0.035	0.022	0.030	0.037	0.068	0.049	0.073	0.058	0.045	0.059	0.051	0.036	0.034	0.026	0.050	0.048
258	0.008	0.033	0.015	0.004	0.000	0.000	0.000	0.004	0.017	0.005	0.000	0.004	0.018	0.006	0.003	0.005	0.006	0.000	0.013	0.004	0.010	0.003
260	0.016	0.020	0.015	0.040	0.052	0.033	0.040	0.013	0.025	0.034	0.013	0.045	0.030	0.045	0.040	0.039	0.035	0.060	0.021	0.022	0.025	0.016
262	0.011	0.013	0.008	0.008	0.007	0.013	0.015	0.000	0.010	0.005	0.004	0.004	0.006	0.009	0.008	0.010	0.006	0.018	0.029	0.004	0.005	0.000
264	0.055	0.027	0.015	0.032	0.028	0.020	0.030	0.035	0.025	0.031	0.034	0.033	0.030	0.030	0.035	0.010	0.033	0.024	0.029	0.026	0.040	0.021
266	0.016	0.027	0.000	0.016	0.003	0.000	0.035	0.013	0.007	0.010	0.013	0.004	0.018	0.009	0.005	0.015	0.006	0.012	0.008	0.000	0.005	0.011
268	0.029	0.007	0.015	0.004	0.017	0.020	0.025	0.026	0.030	0.003	0.043	0.024	0.024	0.027	0.032	0.029	0.033	0.024	0.017	0.022	0.010	0.005
270	0.003	0.000	0.000	0.004	0.007	0.000	0.000	0.009	0.005	0.003	0.000	0.008	0.000	0.012	0.011	0.000	0.004	0.006	0.000	0.013	0.010	0.003
272	0.013	0.000	0.000	0.028	0.017	0.013	0.000	0.026	0.025	0.008	0.009	0.004	0.012	0.003	0.008	0.020	0.014	0.006	0.013	0.013	0.020	0.029
274	0.005	0.033	0.000	0.004	0.003	0.007	0.010	0.000	0.010	0.024	0.013	0.012	0.012	0.009	0.021	0.010	0.006	0.000	0.008	0.000	0.000	0.013
276	0.011	0.000	0.000	0.008	0.007	0.020	0.000	0.004	0.005	0.003	0.000	0.012	0.006	0.012	0.005	0.010	0.010	0.006	0.008	0.000	0.015	0.016
278	0.011	0.000	0.008	0.004	0.000	0.007	0.005	0.009	0.007	0.003	0.004	0.008	0.000	0.006	0.000	0.005	0.006	0.000	0.008	0.009	0.005	0.016
280	0.000	0.000	0.008	0.008	0.017	0.000	0.020	0.009	0.012	0.003	0.000	0.012	0.000	0.003	0.003	0.000	0.006	0.000	0.000	0.009	0.005	0.005
282	0.000	0.000	0.008	0.004	0.000	0.007	0.000	0.004	0.005	0.000	0.013	0.004	0.000	0.006	0.011	0.010	0.010	0.006	0.000	0.004	0.005	0.011
284	0.003	0.000	0.015	0.000	0.003	0.000	0.005	0.004	0.005	0.000	0.004	0.008	0.000	0.006	0.008	0.000	0.004	0.012	0.000	0.004	0.015	0.011

633 -continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
286	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.002	0.008	0.004	0.004	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.004	0.005	0.000
288	0.000	0.000	0.008	0.000	0.007	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.012	0.006	0.005	0.010	0.006	0.006	0.004	0.004	0.010	0.011
290	0.013	0.007	0.000	0.020	0.021	0.013	0.020	0.000	0.010	0.005	0.017	0.008	0.018	0.012	0.003	0.025	0.008	0.012	0.004	0.009	0.010	0.003
292	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.012	0.004	0.000	0.000	0.011
294	0.008	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.004	0.006	0.006	0.000	0.000	0.002	0.000	0.000	0.004	0.005	0.000
296	0.000	0.000	0.000	0.000	0.000	0.007	0.005	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
298	0.000	0.000	0.000	0.000	0.000	0.007	0.010	0.000	0.005	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.002	0.006	0.004	0.000	0.000	0.003
300	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.005
302	0.003	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
304	0.003	0.007	0.000	0.000	0.000	0.000	0.005	0.000	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.004	0.000	0.005
306	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.004	0.000	0.009	0.000	0.000	0.002	0.000	0.004	0.000	0.000	0.000
308	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000
310	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.009	0.002	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.004	0.006	0.000	0.000	0.000	0.000
312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.002	0.000	0.000	0.000	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
314	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000
316	0.000	0.007	0.000	0.000	0.003	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.006	0.006	0.000	0.000	0.000	0.000	0.004	0.000	0.005	0.000
318	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.006	0.004	0.000	0.000	0.000
320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
322	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.010	0.002	0.006	0.000	0.000	0.000	0.000
324	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.003	0.000	0.000	0.006	0.006	0.000	0.004	0.000	0.000
330	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
332	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.000
334	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
336	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Locus: *Oki101*																						
n	190	80	65	125	142	73	103	115	203	191	116	123	81	165	185	102	257	82	118	116	99	190
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000

635 -continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
174	0.000	0.000	0.000	0.00 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000
178	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
186	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
190	0.003	0.031	0.000	0.012	0.007	0.000	0.010	0.000	0.000	0.005	0.000	0.008	0.012	0.006	0.005	0.015	0.006	0.006	0.008	0.017	0.010	0.000
194	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
198	0.000	0.000	0.008	0.004	0.000	0.007	0.010	0.009	0.000	0.003	0.000	0.004	0.000	0.000	0.003	0.000	0.004	0.000	0.000	0.000	0.000	0.000
202	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.002	0.000	0.013	0.000	0.000	0.000	0.003	0.005	0.004	0.000	0.004	0.000	0.000	0.000
206	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.004	0.000	0.003
210	0.003	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.006	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
214	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
218	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000
222	0.000	0.006	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.013	0.004	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000
226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000
230	0.005	0.000	0.000	0.008	0.004	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.000	0.003
234	0.005	0.000	0.000	0.000	0.004	0.000	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.005	0.004	0.006	0.000	0.009	0.005	0.000
238	0.003	0.000	0.000	0.004	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.005	0.000	0.000	0.000	0.004	0.000	0.000	0.000
242	0.000	0.006	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.010	0.000	0.006	0.004	0.004	0.000	0.000
246	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.003	0.005	0.006	0.000	0.000	0.000	0.005	0.005
250	0.005	0.019	0.000	0.000	0.007	0.014	0.000	0.009	0.005	0.008	0.004	0.004	0.012	0.012	0.016	0.005	0.002	0.012	0.008	0.000	0.000	0.008
254	0.000	0.000	0.000	0.000	0.004	0.000	0.010	0.000	0.005	0.000	0.009	0.000	0.000	0.003	0.000	0.000	0.002	0.006	0.000	0.009	0.005	0.005
258	0.003	0.013	0.008	0.008	0.000	0.007	0.010	0.000	0.002	0.008	0.009	0.000	0.000	0.003	0.003	0.005	0.008	0.006	0.000	0.004	0.000	0.000
262	0.008	0.006	0.000	0.000	0.011	0.007	0.000	0.004	0.002	0.003	0.000	0.004	0.000	0.000	0.003	0.005	0.019	0.000	0.008	0.009	0.005	0.000
266	0.000	0.031	0.000	0.000	0.004	0.007	0.019	0.000	0.005	0.003	0.022	0.004	0.006	0.021	0.008	0.005	0.008	0.018	0.008	0.009	0.010	0.008
270	0.005	0.000	0.008	0.004	0.007	0.000	0.015	0.030	0.015	0.026	0.009	0.012	0.037	0.015	0.008	0.005	0.014	0.006	0.013	0.017	0.010	0.005
274	0.024	0.025	0.015	0.024	0.018	0.027	0.049	0.035	0.005	0.013	0.047	0.024	0.000	0.033	0.016	0.025	0.043	0.006	0.008	0.022	0.020	0.013
278	0.016	0.025	0.023	0.012	0.007	0.027	0.015	0.039	0.049	0.010	0.034	0.016	0.025	0.021	0.016	0.015	0.018	0.018	0.021	0.026	0.030	0.021
282	0.037	0.019	0.008	0.016	0.046	0.014	0.019	0.048	0.025	0.018	0.056	0.037	0.031	0.027	0.035	0.044	0.027	0.030	0.030	0.017	0.025	0.034

637 -continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
286	0.042	0.013	0.054	0.032	0.028	0.027	0.029	0.048	0.022	0.029	0.013	0.033	0.025	0.033	0.043	0.044	0.033	0.037	0.030	0.043	0.035	0.024
290	0.034	0.006	0.069	0.068	0.039	0.055	0.034	0.057	0.059	0.050	0.039	0.041	0.056	0.030	0.038	0.039	0.033	0.061	0.051	0.056	0.040	0.045
294	0.047	0.081	0.046	0.028	0.046	0.048	0.058	0.039	0.042	0.021	0.034	0.033	0.037	0.027	0.027	0.049	0.062	0.055	0.030	0.039	0.030	0.047
298	0.053	0.056	0.069	0.040	0.042	0.055	0.039	0.061	0.054	0.086	0.026	0.020	0.049	0.036	0.030	0.034	0.049	0.079	0.025	0.030	0.056	0.058
302	0.045	0.037	0.038	0.052	0.021	0.062	0.019	0.078	0.042	0.031	0.034	0.045	0.043	0.036	0.041	0.049	0.033	0.037	0.030	0.043	0.040	0.047
306	0.034	0.037	0.038	0.056	0.039	0.021	0.024	0.048	0.032	0.045	0.030	0.073	0.037	0.039	0.065	0.025	0.047	0.043	0.038	0.043	0.061	0.071
308	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
310	0.058	0.044	0.069	0.064	0.032	0.041	0.058	0.030	0.034	0.076	0.017	0.057	0.074	0.045	0.041	0.098	0.056	0.018	0.064	0.065	0.040	0.021
312	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
314	0.029	0.087	0.038	0.052	0.028	0.062	0.049	0.035	0.042	0.045	0.052	0.045	0.049	0.067	0.062	0.034	0.039	0.043	0.042	0.043	0.025	0.034
316	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
318	0.066	0.019	0.046	0.032	0.035	0.055	0.034	0.009	0.054	0.052	0.026	0.053	0.043	0.045	0.035	0.054	0.033	0.030	0.047	0.030	0.040	0.037
320	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000
322	0.053	0.063	0.031	0.028	0.060	0.055	0.058	0.061	0.052	0.031	0.056	0.045	0.025	0.030	0.027	0.039	0.039	0.030	0.030	0.082	0.071	0.016
324	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
326	0.047	0.031	0.069	0.048	0.063	0.027	0.029	0.030	0.049	0.071	0.103	0.049	0.068	0.055	0.073	0.059	0.049	0.037	0.038	0.026	0.045	0.037
330	0.024	0.025	0.054	0.036	0.046	0.034	0.024	0.013	0.032	0.060	0.039	0.045	0.037	0.045	0.054	0.034	0.019	0.030	0.038	0.030	0.015	0.034
334	0.029	0.025	0.031	0.036	0.042	0.021	0.049	0.043	0.025	0.026	0.065	0.045	0.043	0.048	0.032	0.044	0.029	0.043	0.047	0.026	0.035	0.032
338	0.053	0.031	0.038	0.036	0.074	0.007	0.024	0.052	0.034	0.042	0.047	0.024	0.049	0.033	0.038	0.025	0.023	0.055	0.047	0.013	0.051	0.024
342	0.018	0.025	0.038	0.048	0.035	0.027	0.044	0.022	0.027	0.021	0.026	0.024	0.025	0.021	0.027	0.049	0.012	0.030	0.030	0.026	0.030	0.013
346	0.034	0.050	0.038	0.020	0.035	0.021	0.019	0.013	0.042	0.013	0.022	0.045	0.037	0.048	0.043	0.025	0.039	0.018	0.038	0.039	0.051	0.016
350	0.026	0.019	0.000	0.032	0.028	0.048	0.044	0.013	0.032	0.029	0.034	0.028	0.031	0.009	0.014	0.000	0.039	0.024	0.021	0.017	0.030	0.029
354	0.037	0.031	0.008	0.020	0.014	0.041	0.029	0.017	0.042	0.031	0.013	0.016	0.019	0.018	0.008	0.005	0.025	0.018	0.042	0.030	0.061	0.034
358	0.011	0.006	0.023	0.028	0.025	0.007	0.019	0.009	0.007	0.013	0.004	0.012	0.006	0.012	0.027	0.005	0.014	0.006	0.008	0.017	0.015	0.029
362	0.013	0.013	0.038	0.040	0.004	0.021	0.005	0.022	0.012	0.005	0.009	0.020	0.012	0.012	0.011	0.025	0.016	0.018	0.013	0.022	0.010	0.029
366	0.008	0.025	0.000	0.012	0.004	0.000	0.039	0.013	0.017	0.005	0.013	0.008	0.006	0.018	0.011	0.015	0.019	0.018	0.000	0.004	0.010	0.039
370	0.005	0.006	0.015	0.000	0.011	0.000	0.024	0.004	0.007	0.005	0.004	0.020	0.019	0.015	0.014	0.000	0.014	0.012	0.034	0.009	0.010	0.018

-continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
374	0.011	0.025	0.008	0.012	0.011	0.014	0.005	0.004	0.015	0.005	0.004	0.008	0.006	0.012	0.014	0.015	0.012	0.018	0.008	0.022	0.000	0.021
378	0.011	0.000	0.000	0.000	0.007	0.021	0.005	0.004	0.012	0.005	0.013	0.008	0.019	0.012	0.000	0.010	0.004	0.018	0.021	0.000	0.000	0.005
382	0.008	0.006	0.008	0.008	0.011	0.000	0.015	0.013	0.012	0.003	0.004	0.000	0.000	0.003	0.005	0.000	0.008	0.012	0.013	0.009	0.015	0.000
386	0.003	0.006	0.015	0.008	0.007	0.034	0.019	0.013	0.002	0.016	0.013	0.004	0.006	0.024	0.008	0.000	0.006	0.006	0.004	0.004	0.000	0.016
390	0.005	0.000	0.000	0.012	0.004	0.007	0.010	0.009	0.002	0.003	0.009	0.004	0.006	0.003	0.011	0.020	0.012	0.000	0.000	0.000	0.000	0.011
394	0.005	0.006	0.000	0.008	0.000	0.000	0.005	0.000	0.012	0.018	0.004	0.000	0.000	0.000	0.008	0.010	0.004	0.012	0.004	0.000	0.000	0.005
398	0.003	0.006	0.000	0.000	0.004	0.000	0.000	0.000	0.005	0.008	0.000	0.000	0.000	0.012	0.003	0.005	0.008	0.000	0.004	0.000	0.010	0.008
402	0.000	0.006	0.000	0.004	0.004	0.007	0.005	0.000	0.002	0.005	0.000	0.004	0.000	0.009	0.011	0.010	0.002	0.006	0.004	0.004	0.005	0.008
406	0.003	0.000	0.008	0.000	0.004	0.007	0.005	0.004	0.005	0.021	0.000	0.008	0.012	0.000	0.000	0.000	0.004	0.006	0.004	0.004	0.005	0.024
410	0.008	0.013	0.000	0.000	0.007	0.007	0.005	0.004	0.007	0.005	0.000	0.012	0.012	0.003	0.003	0.005	0.006	0.000	0.008	0.004	0.000	0.016
414	0.005	0.000	0.000	0.000	0.000	0.007	0.000	0.004	0.005	0.005	0.000	0.000	0.006	0.000	0.008	0.015	0.006	0.012	0.008	0.000	0.010	0.011
418	0.003	0.000	0.000	0.008	0.000	0.007	0.000	0.004	0.002	0.003	0.000	0.008	0.000	0.006	0.014	0.000	0.002	0.000	0.000	0.009	0.005	0.000
422	0.005	0.000	0.008	0.000	0.004	0.021	0.000	0.004	0.000	0.005	0.000	0.008	0.000	0.000	0.000	0.005	0.002	0.006	0.008	0.000	0.005	0.008
426	0.003	0.000	0.008	0.004	0.004	0.007	0.000	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.005	0.000
430	0.003	0.000	0.008	0.000	0.004	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.004	0.000	0.000	0.011
434	0.008	0.013	0.000	0.000	0.011	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.008	0.013	0.000	0.003
438	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.008	0.000	0.003	0.000	0.000	0.000	0.000	0.004	0.013	0.005	0.000
442	0.005	0.000	0.008	0.000	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.003	0.003	0.000	0.006	0.006	0.004	0.009	0.000	0.000
446	0.003	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.004	0.006	0.000	0.000	0.005	0.002	0.012	0.000	0.000	0.000	0.000
450	0.003	0.006	0.000	0.000	0.011	0.000	0.000	0.009	0.005	0.000	0.000	0.000	0.006	0.009	0.005	0.005	0.002	0.012	0.004	0.004	0.000	0.003
454	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008
458	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000
462	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.005
466	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.013	0.004	0.000	0.000	0.003	0.000	0.000	0.000	0.004	0.000	0.000	0.000
470	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
474	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
482	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.004	0.000	0.000	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
486	0.003	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.004	0.000	0.000	0.000
490	0.005	0.000	0.000	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000
494	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.002	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.004	0.005	0.000
498	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.003	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
506	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.009	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Locus: *One101*																						
n	178	80	65	125	143	73	103	109	162	184	105	123	81	168	187	102	261	77	119	117	98	183
173	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
189	0.014	0.000	0.000	0.012	0.007	0.007	0.000	0.014	0.012	0.000	0.010	0.008	0.000	0.006	0.003	0.000	0.006	0.013	0.008	0.000	0.000	0.016
193	0.011	0.006	0.023	0.016	0.010	0.007	0.000	0.000	0.000	0.003	0.000	0.004	0.006	0.015	0.008	0.005	0.002	0.013	0.004	0.009	0.010	0.005
197	0.020	0.006	0.023	0.004	0.003	0.000	0.015	0.005	0.012	0.011	0.005	0.004	0.012	0.006	0.013	0.010	0.010	0.006	0.025	0.013	0.015	0.003
201	0.020	0.000	0.000	0.016	0.021	0.007	0.005	0.014	0.006	0.014	0.010	0.012	0.031	0.006	0.011	0.005	0.021	0.006	0.021	0.013	0.015	0.003
205	0.011	0.019	0.038	0.008	0.024	0.007	0.024	0.018	0.019	0.038	0.005	0.024	0.025	0.012	0.016	0.005	0.023	0.019	0.004	0.013	0.020	0.011
209	0.045	0.006	0.015	0.032	0.017	0.027	0.019	0.046	0.040	0.030	0.019	0.033	0.056	0.054	0.048	0.029	0.023	0.032	0.042	0.021	0.026	0.000
213	0.028	0.019	0.031	0.032	0.024	0.021	0.019	0.028	0.040	0.022	0.010	0.033	0.012	0.030	0.021	0.020	0.025	0.019	0.029	0.034	0.026	0.025
217	0.034	0.006	0.023	0.064	0.035	0.034	0.024	0.037	0.037	0.030	0.038	0.020	0.037	0.027	0.021	0.069	0.054	0.019	0.034	0.026	0.046	0.027
221	0.048	0.056	0.023	0.032	0.017	0.027	0.039	0.073	0.025	0.038	0.086	0.033	0.068	0.063	0.040	0.034	0.023	0.052	0.029	0.021	0.051	0.011
225	0.056	0.037	0.015	0.028	0.028	0.021	0.053	0.069	0.031	0.024	0.029	0.033	0.056	0.027	0.035	0.039	0.036	0.019	0.029	0.051	0.026	0.019
229	0.022	0.050	0.023	0.020	0.038	0.034	0.034	0.009	0.046	0.016	0.029	0.024	0.031	0.048	0.070	0.010	0.038	0.026	0.025	0.047	0.046	0.025
233	0.045	0.037	0.054	0.040	0.049	0.034	0.078	0.032	0.049	0.022	0.038	0.041	0.043	0.030	0.032	0.059	0.033	0.065	0.025	0.047	0.036	0.041
237	0.028	0.013	0.038	0.024	0.035	0.068	0.039	0.032	0.049	0.038	0.090	0.033	0.031	0.054	0.024	0.069	0.023	0.039	0.055	0.030	0.056	0.049
241	0.056	0.131	0.062	0.040	0.049	0.055	0.039	0.060	0.059	0.033	0.067	0.057	0.037	0.045	0.043	0.054	0.046	0.032	0.055	0.043	0.031	0.041
245	0.031	0.056	0.085	0.048	0.066	0.041	0.039	0.041	0.059	0.052	0.076	0.065	0.037	0.057	0.048	0.074	0.050	0.032	0.055	0.051	0.056	0.027
249	0.022	0.050	0.038	0.052	0.077	0.096	0.058	0.050	0.052	0.043	0.095	0.069	0.068	0.065	0.051	0.064	0.067	0.045	0.063	0.043	0.056	0.046
253	0.037	0.031	0.069	0.052	0.038	0.068	0.044	0.041	0.049	0.073	0.024	0.057	0.074	0.057	0.048	0.059	0.036	0.071	0.059	0.056	0.061	0.038

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
257	0.073	0.037	0.015	0.032	0.059	0.041	0.029	0.032	0.065	0.073	0.057	0.073	0.037	0.048	0.056	0.059	0.054	0.039	0.038	0.051	0.066	0.055
261	0.042	0.031	0.023	0.056	0.024	0.062	0.039	0.060	0.059	0.024	0.033	0.041	0.056	0.039	0.072	0.034	0.044	0.052	0.034	0.034	0.026	0.074
265	0.034	0.025	0.046	0.044	0.059	0.027	0.058	0.046	0.049	0.049	0.038	0.057	0.037	0.045	0.040	0.039	0.057	0.065	0.025	0.056	0.041	0.068
269	0.053	0.031	0.085	0.040	0.024	0.062	0.092	0.087	0.049	0.071	0.038	0.069	0.037	0.036	0.043	0.029	0.054	0.045	0.071	0.060	0.061	0.057
273	0.051	0.100	0.031	0.072	0.028	0.055	0.024	0.023	0.025	0.046	0.071	0.045	0.031	0.048	0.035	0.088	0.029	0.026	0.067	0.068	0.036	0.027
277	0.056	0.025	0.046	0.036	0.042	0.034	0.049	0.032	0.037	0.052	0.029	0.033	0.025	0.021	0.051	0.020	0.040	0.039	0.038	0.034	0.026	0.068
281	0.028	0.031	0.023	0.060	0.028	0.048	0.044	0.037	0.040	0.027	0.033	0.033	0.031	0.063	0.027	0.039	0.052	0.032	0.025	0.051	0.031	0.055
285	0.034	0.044	0.008	0.036	0.028	0.021	0.058	0.014	0.028	0.011	0.010	0.016	0.025	0.018	0.021	0.020	0.019	0.013	0.021	0.021	0.036	0.030
289	0.025	0.000	0.023	0.016	0.059	0.027	0.015	0.018	0.009	0.005	0.010	0.028	0.031	0.027	0.035	0.005	0.029	0.019	0.029	0.030	0.015	0.022
293	0.031	0.075	0.008	0.020	0.028	0.007	0.019	0.032	0.012	0.022	0.014	0.004	0.019	0.015	0.024	0.029	0.038	0.052	0.025	0.013	0.010	0.014
297	0.003	0.019	0.023	0.016	0.010	0.014	0.019	0.005	0.015	0.022	0.010	0.008	0.012	0.009	0.019	0.005	0.010	0.032	0.008	0.009	0.020	0.008
301	0.006	0.031	0.015	0.016	0.017	0.021	0.000	0.005	0.009	0.008	0.010	0.004	0.000	0.012	0.003	0.000	0.006	0.006	0.013	0.017	0.005	0.014
305	0.003	0.000	0.031	0.012	0.000	0.007	0.019	0.023	0.003	0.030	0.000	0.020	0.006	0.006	0.008	0.000	0.015	0.013	0.013	0.009	0.010	0.063
309	0.003	0.006	0.015	0.016	0.014	0.007	0.000	0.000	0.000	0.019	0.010	0.004	0.012	0.012	0.013	0.010	0.010	0.019	0.017	0.009	0.000	0.014
313	0.006	0.000	0.023	0.008	0.014	0.000	0.005	0.009	0.006	0.033	0.000	0.008	0.000	0.003	0.008	0.010	0.004	0.019	0.008	0.004	0.026	0.030
317	0.008	0.000	0.008	0.000	0.000	0.007	0.000	0.000	0.000	0.005	0.000	0.000	0.012	0.000	0.000	0.005	0.004	0.006	0.004	0.000	0.000	0.005
321	0.003	0.000	0.008	0.000	0.007	0.000	0.000	0.000	0.000	0.008	0.010	0.008	0.000	0.000	0.005	0.000	0.010	0.006	0.000	0.000	0.000	0.003
325	0.003	0.000	0.008	0.000	0.003	0.007	0.000	0.009	0.003	0.000	0.000	0.000	0.006	0.000	0.003	0.000	0.004	0.000	0.000	0.013	0.010	0.003
329	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000
333	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000
337	0.000	0.019	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.000
341	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000
345	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
353	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
365	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Locus: *One102*																						
n	184	66	65	121	142	58	92	89	202	187	88	123	80	151	186	102	259	68	111	107	100	176
259	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
267	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.009
271	0.008	0.000	0.000	0.000	0.011	0.000	0.005	0.000	0.007	0.011	0.000	0.008	0.000	0.000	0.003	0.000	0.002	0.007	0.000	0.005	0.005	0.011
275	0.003	0.008	0.000	0.000	0.004	0.000	0.005	0.000	0.002	0.000	0.028	0.008	0.000	0.007	0.008	0.005	0.004	0.000	0.005	0.000	0.005	0.020
279	0.014	0.015	0.023	0.017	0.014	0.026	0.005	0.028	0.015	0.021	0.000	0.012	0.000	0.020	0.003	0.010	0.023	0.044	0.027	0.014	0.025	0.048
283	0.019	0.053	0.008	0.029	0.042	0.026	0.022	0.039	0.022	0.013	0.011	0.008	0.050	0.017	0.024	0.025	0.035	0.015	0.050	0.014	0.010	0.020
287	0.046	0.023	0.031	0.045	0.039	0.034	0.038	0.011	0.037	0.013	0.023	0.061	0.013	0.040	0.030	0.034	0.037	0.059	0.059	0.061	0.055	0.003
291	0.046	0.015	0.031	0.066	0.060	0.043	0.033	0.045	0.035	0.056	0.045	0.045	0.013	0.056	0.048	0.074	0.056	0.022	0.032	0.056	0.050	0.091
295	0.073	0.045	0.054	0.074	0.070	0.078	0.136	0.056	0.069	0.048	0.068	0.053	0.056	0.070	0.083	0.083	0.062	0.037	0.050	0.047	0.080	0.051
299	0.073	0.136	0.115	0.066	0.088	0.103	0.043	0.101	0.097	0.067	0.102	0.069	0.106	0.056	0.097	0.049	0.079	0.059	0.063	0.098	0.080	0.082
303	0.087	0.129	0.100	0.083	0.049	0.034	0.065	0.084	0.064	0.176	0.091	0.110	0.094	0.099	0.070	0.108	0.091	0.074	0.104	0.093	0.100	0.057
307	0.133	0.136	0.123	0.103	0.077	0.086	0.130	0.140	0.124	0.080	0.108	0.142	0.144	0.103	0.091	0.113	0.120	0.096	0.081	0.089	0.085	0.105
311	0.082	0.068	0.062	0.079	0.085	0.103	0.087	0.107	0.074	0.064	0.136	0.057	0.081	0.070	0.086	0.108	0.062	0.147	0.090	0.131	0.095	0.063
315	0.076	0.061	0.069	0.128	0.102	0.121	0.082	0.079	0.121	0.112	0.085	0.093	0.087	0.119	0.116	0.088	0.097	0.096	0.095	0.065	0.085	0.111
319	0.084	0.091	0.069	0.066	0.130	0.078	0.103	0.084	0.099	0.104	0.097	0.089	0.087	0.083	0.105	0.088	0.085	0.066	0.095	0.056	0.085	0.071
323	0.071	0.091	0.069	0.062	0.056	0.103	0.065	0.073	0.064	0.037	0.034	0.053	0.063	0.060	0.065	0.098	0.073	0.066	0.086	0.084	0.060	0.051
327	0.052	0.053	0.046	0.062	0.046	0.043	0.076	0.062	0.037	0.053	0.085	0.053	0.044	0.066	0.054	0.039	0.050	0.059	0.068	0.051	0.040	0.031
331	0.054	0.023	0.077	0.021	0.039	0.043	0.022	0.034	0.050	0.051	0.057	0.033	0.069	0.043	0.032	0.025	0.031	0.029	0.023	0.056	0.040	0.048
335	0.019	0.015	0.008	0.037	0.035	0.034	0.043	0.022	0.027	0.027	0.000	0.020	0.050	0.036	0.019	0.010	0.033	0.029	0.027	0.033	0.020	0.014
339	0.019	0.015	0.038	0.025	0.032	0.000	0.022	0.000	0.015	0.021	0.017	0.016	0.019	0.023	0.013	0.015	0.014	0.029	0.009	0.005	0.040	0.068
343	0.005	0.008	0.008	0.000	0.014	0.017	0.011	0.006	0.010	0.005	0.006	0.016	0.006	0.007	0.019	0.025	0.015	0.029	0.009	0.019	0.020	0.020
347	0.014	0.015	0.023	0.012	0.004	0.000	0.000	0.017	0.005	0.013	0.000	0.024	0.019	0.007	0.011	0.000	0.017	0.015	0.000	0.014	0.005	0.014
351	0.005	0.000	0.015	0.008	0.000	0.009	0.000	0.011	0.010	0.003	0.006	0.004	0.000	0.003	0.008	0.000	0.004	0.007	0.009	0.005	0.005	0.003
355	0.008	0.000	0.008	0.004	0.000	0.009	0.000	0.000	0.000	0.003	0.000	0.012	0.000	0.010	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.006

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
359	0.005	0.000	0.015	0.004	0.004	0.009	0.000	0.000	0.000	0.013	0.000	0.004	0.000	0.003	0.000	0.000	0.010	0.000	0.009	0.000	0.005	0.003
363	0.000	0.000	0.000	0.004	0.000	0.000	0.005	0.000	0.005	0.005	0.000	0.004	0.000	0.000	0.003	0.000	0.002	0.000	0.005	0.000	0.000	0.000
367	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.004	0.000	0.003	0.005	0.005	0.000	0.015	0.005	0.000	0.005	0.000
371	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000
379	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.005	0.000	0.000
Locus: *One104*																						
n	162	80	64	121	142	75	104	65	203	176	115	121	81	167	183	99	261	59	101	116	101	133
118	0.006	0.000	0.000	0.017	0.018	0.007	0.010	0.000	0.005	0.014	0.009	0.041	0.012	0.018	0.005	0.020	0.002	0.008	0.020	0.013	0.010	0.023
122	0.046	0.031	0.016	0.054	0.053	0.100	0.038	0.054	0.049	0.082	0.100	0.087	0.037	0.081	0.060	0.061	0.065	0.085	0.084	0.060	0.040	0.060
126	0.059	0.050	0.016	0.041	0.049	0.047	0.048	0.031	0.049	0.114	0.061	0.050	0.037	0.039	0.066	0.045	0.023	0.051	0.030	0.043	0.074	0.079
130	0.077	0.069	0.063	0.045	0.039	0.047	0.034	0.085	0.047	0.057	0.004	0.050	0.056	0.057	0.044	0.045	0.052	0.051	0.045	0.039	0.040	0.049
134	0.062	0.075	0.086	0.025	0.060	0.047	0.067	0.046	0.049	0.074	0.052	0.045	0.043	0.042	0.057	0.081	0.059	0.051	0.069	0.056	0.030	0.011
138	0.034	0.037	0.055	0.033	0.011	0.027	0.048	0.015	0.037	0.028	0.017	0.029	0.019	0.036	0.025	0.020	0.023	0.051	0.010	0.022	0.015	0.030
142	0.031	0.031	0.016	0.021	0.042	0.040	0.019	0.023	0.027	0.028	0.009	0.037	0.043	0.048	0.027	0.015	0.013	0.034	0.030	0.022	0.030	0.023
146	0.022	0.056	0.031	0.033	0.039	0.020	0.038	0.015	0.032	0.006	0.043	0.021	0.006	0.033	0.036	0.025	0.027	0.017	0.025	0.039	0.020	0.015
150	0.022	0.013	0.031	0.021	0.021	0.020	0.010	0.000	0.042	0.023	0.013	0.021	0.012	0.024	0.025	0.010	0.052	0.000	0.045	0.030	0.030	0.064
154	0.049	0.025	0.016	0.037	0.042	0.060	0.048	0.038	0.034	0.031	0.022	0.045	0.037	0.048	0.038	0.051	0.038	0.093	0.050	0.034	0.040	0.026
158	0.046	0.050	0.055	0.033	0.035	0.027	0.048	0.038	0.034	0.057	0.022	0.062	0.056	0.039	0.041	0.045	0.036	0.042	0.035	0.047	0.074	0.041
162	0.056	0.069	0.023	0.033	0.042	0.053	0.043	0.085	0.071	0.051	0.043	0.054	0.068	0.036	0.068	0.030	0.057	0.034	0.045	0.039	0.035	0.034
166	0.022	0.031	0.055	0.054	0.035	0.040	0.038	0.031	0.044	0.031	0.035	0.062	0.037	0.033	0.036	0.035	0.042	0.025	0.045	0.039	0.069	0.045
170	0.031	0.019	0.063	0.074	0.053	0.067	0.058	0.077	0.052	0.031	0.052	0.050	0.080	0.036	0.049	0.066	0.036	0.051	0.084	0.060	0.059	0.064
174	0.043	0.044	0.039	0.054	0.070	0.060	0.058	0.023	0.052	0.043	0.070	0.037	0.068	0.045	0.049	0.045	0.044	0.051	0.030	0.086	0.020	0.041
178	0.083	0.019	0.000	0.054	0.074	0.040	0.063	0.046	0.067	0.057	0.048	0.041	0.037	0.048	0.036	0.081	0.054	0.042	0.054	0.065	0.045	0.026
182	0.043	0.044	0.063	0.037	0.042	0.020	0.058	0.046	0.034	0.031	0.091	0.054	0.031	0.084	0.055	0.061	0.082	0.051	0.045	0.034	0.054	0.049
186	0.083	0.063	0.047	0.074	0.053	0.033	0.043	0.085	0.042	0.054	0.057	0.033	0.037	0.057	0.041	0.056	0.056	0.034	0.054	0.047	0.015	0.034
190	0.022	0.031	0.047	0.037	0.042	0.067	0.058	0.069	0.042	0.031	0.104	0.070	0.056	0.057	0.057	0.056	0.077	0.017	0.040	0.026	0.074	0.038

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
194	0.034	0.044	0.063	0.050	0.028	0.027	0.043	0.046	0.037	0.026	0.043	0.033	0.068	0.018	0.046	0.051	0.033	0.059	0.050	0.056	0.064	0.049
198	0.028	0.075	0.063	0.033	0.028	0.047	0.019	0.031	0.032	0.043	0.039	0.029	0.037	0.045	0.044	0.030	0.027	0.042	0.030	0.034	0.050	0.049
202	0.019	0.037	0.031	0.021	0.035	0.027	0.019	0.054	0.020	0.014	0.000	0.017	0.031	0.021	0.014	0.030	0.023	0.008	0.025	0.022	0.020	0.023
206	0.012	0.025	0.031	0.037	0.014	0.013	0.043	0.031	0.030	0.009	0.009	0.004	0.019	0.024	0.019	0.005	0.021	0.017	0.020	0.026	0.035	0.034
210	0.031	0.006	0.016	0.029	0.021	0.007	0.014	0.008	0.020	0.006	0.004	0.004	0.012	0.003	0.011	0.005	0.023	0.059	0.015	0.017	0.005	0.034
214	0.012	0.025	0.031	0.008	0.007	0.013	0.000	0.000	0.012	0.011	0.035	0.008	0.031	0.000	0.008	0.010	0.011	0.008	0.005	0.009	0.005	0.023
218	0.009	0.013	0.008	0.012	0.018	0.007	0.005	0.000	0.010	0.014	0.009	0.012	0.012	0.003	0.008	0.000	0.008	0.008	0.000	0.017	0.015	0.000
222	0.003	0.006	0.000	0.004	0.004	0.007	0.000	0.008	0.010	0.006	0.000	0.000	0.006	0.006	0.005	0.005	0.004	0.008	0.005	0.009	0.015	0.011
226	0.009	0.006	0.008	0.012	0.007	0.007	0.029	0.008	0.010	0.014	0.000	0.000	0.000	0.003	0.000	0.005	0.004	0.000	0.005	0.000	0.005	0.000
230	0.003	0.000	0.008	0.004	0.000	0.007	0.000	0.008	0.002	0.003	0.000	0.000	0.006	0.003	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000
234	0.000	0.000	0.000	0.000	0.004	0.007	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.009	0.005	0.000	0.000	0.000	0.005	0.000	0.000	0.000
238	0.000	0.000	0.000	0.004	0.007	0.000	0.000	0.000	0.005	0.006	0.000	0.000	0.006	0.000	0.011	0.000	0.002	0.000	0.005	0.000	0.005	0.004
242	0.000	0.006	0.016	0.004	0.004	0.007	0.000	0.000	0.000	0.003	0.000	0.004	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.004	0.005	0.015
246	0.003	0.000	0.000	0.004	0.004	0.007	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.002	0.000	0.000	0.000	0.005	0.004
250	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.004	0.000	0.004
254	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
262	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.005	0.004	0.000	0.000	0.000	0.000	0.000
266	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Locus: *One109*

n	186	80	65	125	143	73	104	115	203	177	117	121	81	166	187	102	260	83	119	116	100	194
105	0.022	0.037	0.008	0.012	0.021	0.048	0.019	0.030	0.015	0.011	0.013	0.021	0.006	0.009	0.013	0.010	0.012	0.018	0.013	0.013	0.015	0.000
109	0.043	0.019	0.038	0.044	0.038	0.048	0.043	0.043	0.037	0.034	0.060	0.025	0.025	0.021	0.024	0.015	0.042	0.036	0.021	0.043	0.040	0.021
113	0.008	0.006	0.008	0.012	0.000	0.014	0.014	0.009	0.005	0.051	0.038	0.037	0.025	0.009	0.005	0.005	0.025	0.018	0.008	0.017	0.015	0.018
117	0.043	0.037	0.038	0.056	0.070	0.062	0.024	0.057	0.052	0.037	0.047	0.041	0.049	0.051	0.053	0.039	0.046	0.018	0.071	0.039	0.040	0.031
121	0.121	0.125	0.108	0.088	0.098	0.082	0.115	0.109	0.081	0.110	0.115	0.124	0.123	0.117	0.123	0.098	0.106	0.120	0.092	0.099	0.085	0.106
125	0.142	0.125	0.092	0.092	0.126	0.164	0.139	0.104	0.118	0.085	0.098	0.066	0.154	0.139	0.120	0.162	0.113	0.157	0.139	0.112	0.120	0.111

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
129	0.118	0.156	0.108	0.116	0.101	0.082	0.115	0.130	0.135	0.172	0.094	0.149	0.130	0.120	0.107	0.137	0.121	0.090	0.126	0.108	0.150	0.137
133	0.132	0.087	0.162	0.140	0.133	0.110	0.168	0.143	0.133	0.099	0.145	0.174	0.142	0.148	0.134	0.157	0.112	0.090	0.113	0.116	0.135	0.108
137	0.075	0.150	0.154	0.128	0.101	0.144	0.077	0.126	0.089	0.073	0.060	0.091	0.093	0.099	0.091	0.108	0.096	0.133	0.092	0.099	0.100	0.180
141	0.108	0.113	0.069	0.120	0.087	0.082	0.087	0.074	0.096	0.082	0.051	0.070	0.056	0.081	0.083	0.103	0.081	0.102	0.101	0.099	0.095	0.052
145	0.046	0.031	0.077	0.052	0.056	0.055	0.063	0.061	0.074	0.062	0.056	0.087	0.056	0.048	0.086	0.044	0.065	0.078	0.084	0.069	0.070	0.046
149	0.046	0.050	0.038	0.048	0.059	0.034	0.058	0.043	0.076	0.065	0.064	0.025	0.049	0.048	0.043	0.039	0.063	0.048	0.034	0.103	0.075	0.054
153	0.040	0.037	0.038	0.056	0.059	0.041	0.014	0.043	0.037	0.040	0.030	0.025	0.049	0.024	0.056	0.025	0.037	0.048	0.055	0.034	0.025	0.057
157	0.016	0.006	0.023	0.020	0.017	0.021	0.024	0.009	0.022	0.045	0.056	0.021	0.031	0.018	0.037	0.020	0.035	0.006	0.017	0.017	0.015	0.031
161	0.016	0.019	0.038	0.012	0.017	0.014	0.014	0.013	0.020	0.011	0.038	0.017	0.006	0.030	0.005	0.025	0.023	0.024	0.021	0.017	0.015	0.015
165	0.011	0.000	0.000	0.000	0.007	0.000	0.014	0.004	0.007	0.023	0.009	0.012	0.006	0.015	0.019	0.015	0.006	0.006	0.013	0.013	0.005	0.005
169	0.008	0.000	0.000	0.004	0.003	0.000	0.010	0.000	0.002	0.000	0.021	0.012	0.000	0.003	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.023
173	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.003
177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
181	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
185	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.009	0.000	0.000	0.004	0.006	0.000	0.000	0.000	0.000

Locus:
One111

n	190	80	63	125	143	75	102	115	203	193	115	124	81	167	186	102	259	84	119	117	101	193
144	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
148	0.013	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.010	0.005	0.004	0.012	0.000	0.006	0.000	0.005	0.006	0.006	0.000	0.009	0.015	0.010
152	0.632	0.581	0.651	0.584	0.612	0.613	0.657	0.613	0.567	0.619	0.648	0.657	0.580	0.644	0.624	0.618	0.595	0.631	0.634	0.590	0.624	0.505
156	0.032	0.025	0.024	0.024	0.014	0.013	0.010	0.022	0.027	0.010	0.013	0.016	0.031	0.021	0.024	0.039	0.027	0.018	0.029	0.047	0.015	0.005
160	0.003	0.031	0.008	0.004	0.010	0.000	0.005	0.009	0.010	0.003	0.000	0.008	0.006	0.003	0.013	0.005	0.004	0.006	0.004	0.004	0.000	0.023
164	0.053	0.075	0.024	0.048	0.045	0.053	0.025	0.052	0.062	0.065	0.057	0.048	0.025	0.033	0.032	0.083	0.068	0.036	0.050	0.038	0.059	0.036
168	0.021	0.006	0.008	0.028	0.038	0.053	0.020	0.017	0.022	0.008	0.009	0.020	0.019	0.030	0.032	0.029	0.025	0.024	0.034	0.021	0.030	0.054
172	0.055	0.037	0.040	0.044	0.035	0.040	0.025	0.035	0.052	0.054	0.035	0.036	0.049	0.048	0.043	0.029	0.035	0.048	0.029	0.060	0.030	0.054
176	0.034	0.031	0.032	0.032	0.031	0.027	0.039	0.048	0.030	0.036	0.061	0.020	0.037	0.027	0.040	0.034	0.048	0.030	0.046	0.047	0.035	0.026

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
180	0.024	0.013	0.032	0.040	0.031	0.020	0.044	0.026	0.037	0.031	0.013	0.024	0.037	0.015	0.011	0.025	0.027	0.012	0.013	0.034	0.010	0.065
184	0.037	0.069	0.040	0.060	0.038	0.040	0.039	0.039	0.054	0.047	0.009	0.036	0.049	0.033	0.040	0.039	0.039	0.054	0.038	0.038	0.045	0.018
188	0.016	0.037	0.032	0.016	0.035	0.020	0.015	0.030	0.020	0.034	0.035	0.012	0.031	0.039	0.030	0.025	0.023	0.018	0.038	0.017	0.025	0.054
192	0.024	0.063	0.008	0.044	0.017	0.040	0.010	0.035	0.039	0.016	0.022	0.024	0.043	0.021	0.024	0.029	0.021	0.036	0.017	0.034	0.030	0.010
196	0.005	0.013	0.032	0.016	0.010	0.020	0.010	0.017	0.007	0.021	0.026	0.012	0.019	0.012	0.013	0.005	0.012	0.006	0.004	0.013	0.005	0.008
200	0.016	0.013	0.024	0.008	0.031	0.007	0.029	0.013	0.025	0.023	0.035	0.012	0.006	0.018	0.019	0.020	0.019	0.018	0.021	0.017	0.020	0.000
204	0.008	0.000	0.032	0.016	0.031	0.013	0.039	0.004	0.012	0.008	0.004	0.024	0.043	0.030	0.027	0.000	0.012	0.018	0.017	0.004	0.025	0.010
208	0.008	0.006	0.000	0.004	0.003	0.013	0.005	0.009	0.005	0.013	0.004	0.000	0.000	0.006	0.003	0.005	0.008	0.012	0.008	0.004	0.015	0.028
212	0.008	0.000	0.000	0.004	0.000	0.000	0.015	0.000	0.012	0.005	0.004	0.016	0.012	0.000	0.008	0.000	0.010	0.012	0.008	0.004	0.005	0.000
216	0.008	0.000	0.016	0.008	0.007	0.013	0.005	0.004	0.002	0.000	0.022	0.008	0.000	0.012	0.016	0.010	0.014	0.012	0.004	0.009	0.010	0.057
220	0.003	0.000	0.000	0.008	0.003	0.013	0.005	0.013	0.002	0.000	0.000	0.008	0.006	0.000	0.000	0.000	0.006	0.000	0.000	0.004	0.005	0.003
224	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.005	0.003	0.000	0.000	0.006	0.003	0.000	0.000	0.002	0.006	0.000	0.004	0.000	0.021
228	0.000	0.000	0.000	0.004	0.000	0.000	0.005	0.004	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
232	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.003
236	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
240	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Locus:
One114

n	182	78	64	122	143	63	104	115	204	189	105	124	82	149	187	100	262	83	118	109	101	193
108	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
116	0.005	0.013	0.000	0.004	0.003	0.008	0.000	0.009	0.002	0.005	0.014	0.008	0.000	0.007	0.005	0.005	0.010	0.000	0.000	0.009	0.000	0.003
120	0.014	0.006	0.016	0.020	0.014	0.032	0.014	0.026	0.015	0.019	0.005	0.012	0.012	0.013	0.008	0.000	0.008	0.000	0.013	0.005	0.015	0.008
124	0.011	0.006	0.000	0.008	0.007	0.016	0.005	0.004	0.012	0.003	0.014	0.008	0.024	0.003	0.013	0.010	0.010	0.000	0.008	0.018	0.005	0.008
128	0.003	0.006	0.008	0.004	0.010	0.008	0.005	0.000	0.005	0.011	0.000	0.008	0.006	0.007	0.008	0.010	0.010	0.006	0.008	0.014	0.030	0.003
132	0.005	0.032	0.016	0.008	0.007	0.000	0.019	0.000	0.005	0.005	0.043	0.040	0.012	0.013	0.019	0.005	0.021	0.018	0.013	0.018	0.005	0.026
136	0.027	0.006	0.039	0.025	0.017	0.024	0.029	0.026	0.025	0.042	0.024	0.032	0.043	0.017	0.013	0.040	0.017	0.012	0.034	0.023	0.020	0.041
140	0.055	0.090	0.016	0.041	0.056	0.040	0.043	0.035	0.066	0.034	0.029	0.056	0.091	0.057	0.029	0.045	0.042	0.030	0.034	0.046	0.035	0.054

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
144	0.071	0.064	0.070	0.053	0.059	0.071	0.034	0.078	0.044	0.061	0.081	0.040	0.043	0.091	0.045	0.050	0.067	0.054	0.055	0.046	0.069	0.047
148	0.049	0.064	0.023	0.061	0.045	0.024	0.053	0.074	0.044	0.079	0.052	0.032	0.067	0.057	0.067	0.030	0.057	0.048	0.038	0.060	0.050	0.039
152	0.063	0.032	0.094	0.053	0.063	0.079	0.067	0.087	0.071	0.053	0.057	0.056	0.043	0.057	0.061	0.065	0.055	0.066	0.072	0.060	0.050	0.054
156	0.058	0.006	0.039	0.066	0.045	0.087	0.043	0.065	0.042	0.066	0.029	0.060	0.030	0.030	0.035	0.065	0.069	0.042	0.064	0.069	0.050	0.026
160	0.041	0.032	0.055	0.070	0.042	0.048	0.029	0.074	0.022	0.056	0.029	0.032	0.037	0.060	0.048	0.035	0.034	0.024	0.068	0.041	0.030	0.060
164	0.033	0.026	0.070	0.025	0.049	0.024	0.072	0.039	0.049	0.032	0.019	0.044	0.012	0.057	0.048	0.040	0.036	0.042	0.042	0.032	0.050	0.044
168	0.011	0.083	0.039	0.041	0.024	0.087	0.067	0.009	0.029	0.053	0.048	0.036	0.024	0.064	0.040	0.030	0.050	0.036	0.017	0.018	0.040	0.039
172	0.027	0.006	0.023	0.049	0.042	0.024	0.087	0.057	0.037	0.042	0.033	0.060	0.043	0.027	0.035	0.055	0.025	0.030	0.064	0.041	0.045	0.070
176	0.025	0.038	0.023	0.049	0.028	0.008	0.048	0.026	0.039	0.019	0.029	0.060	0.049	0.040	0.086	0.025	0.053	0.030	0.030	0.032	0.074	0.080
180	0.047	0.026	0.031	0.033	0.066	0.048	0.034	0.030	0.056	0.042	0.033	0.032	0.012	0.030	0.059	0.055	0.042	0.048	0.034	0.064	0.040	0.057
184	0.052	0.090	0.039	0.082	0.042	0.032	0.043	0.078	0.081	0.053	0.052	0.040	0.030	0.054	0.040	0.050	0.023	0.018	0.038	0.050	0.059	0.028
188	0.041	0.006	0.047	0.037	0.049	0.071	0.048	0.026	0.049	0.021	0.057	0.024	0.055	0.034	0.037	0.050	0.040	0.054	0.047	0.046	0.040	0.031
192	0.044	0.051	0.031	0.033	0.031	0.040	0.024	0.026	0.017	0.037	0.057	0.028	0.030	0.023	0.027	0.035	0.021	0.042	0.004	0.018	0.030	0.047
196	0.033	0.019	0.039	0.020	0.031	0.024	0.043	0.022	0.029	0.024	0.024	0.016	0.043	0.037	0.051	0.050	0.025	0.036	0.030	0.028	0.030	0.036
200	0.041	0.064	0.063	0.033	0.042	0.048	0.034	0.043	0.047	0.026	0.043	0.024	0.018	0.030	0.027	0.040	0.042	0.036	0.038	0.050	0.059	0.054
204	0.033	0.006	0.008	0.008	0.024	0.024	0.014	0.017	0.022	0.026	0.000	0.048	0.079	0.034	0.003	0.035	0.050	0.054	0.059	0.055	0.030	0.021
208	0.049	0.026	0.031	0.037	0.024	0.008	0.024	0.035	0.029	0.021	0.029	0.036	0.000	0.023	0.024	0.015	0.029	0.024	0.021	0.023	0.035	0.018
212	0.049	0.051	0.047	0.025	0.031	0.032	0.024	0.022	0.027	0.024	0.043	0.012	0.030	0.027	0.032	0.025	0.032	0.078	0.013	0.032	0.030	0.023
216	0.011	0.038	0.016	0.020	0.024	0.024	0.019	0.035	0.032	0.024	0.019	0.032	0.037	0.030	0.032	0.025	0.023	0.024	0.038	0.018	0.025	0.031
220	0.019	0.026	0.023	0.020	0.017	0.016	0.014	0.004	0.005	0.037	0.024	0.016	0.024	0.020	0.029	0.035	0.021	0.042	0.038	0.005	0.010	0.016
224	0.019	0.019	0.031	0.004	0.024	0.016	0.005	0.017	0.015	0.024	0.019	0.020	0.030	0.010	0.021	0.025	0.017	0.030	0.017	0.018	0.015	0.023
228	0.019	0.013	0.000	0.004	0.028	0.000	0.000	0.004	0.029	0.013	0.024	0.008	0.012	0.010	0.013	0.010	0.013	0.018	0.004	0.023	0.015	0.005
232	0.014	0.032	0.016	0.020	0.007	0.000	0.005	0.004	0.015	0.008	0.000	0.016	0.006	0.013	0.003	0.005	0.015	0.012	0.008	0.018	0.010	0.003
236	0.003	0.006	0.023	0.012	0.007	0.016	0.014	0.013	0.012	0.021	0.014	0.008	0.012	0.007	0.019	0.010	0.008	0.006	0.021	0.005	0.000	0.000
240	0.014	0.013	0.008	0.012	0.007	0.016	0.014	0.013	0.017	0.005	0.010	0.008	0.018	0.000	0.005	0.005	0.013	0.018	0.004	0.005	0.005	0.003
244	0.005	0.000	0.016	0.012	0.017	0.000	0.014	0.000	0.005	0.008	0.014	0.020	0.012	0.003	0.011	0.005	0.006	0.012	0.017	0.000	0.005	0.000
248	0.000	0.000	0.000	0.000	0.003	0.000	0.005	0.000	0.002	0.003	0.029	0.008	0.000	0.007	0.003	0.005	0.011	0.006	0.004	0.005	0.000	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
252	0.000	0.000	0.000	0.008	0.007	0.008	0.005	0.000	0.000	0.000	0.005	0.008	0.006	0.003	0.003	0.000	0.004	0.000	0.000	0.000	0.000	0.000
256	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.000	0.003	0.000	0.010	0.002	0.000	0.000	0.005	0.000	0.003
260	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
Locus: *Ots213*																						
n	190	75	65	122	143	66	96	115	203	194	116	123	82	156	186	102	259	84	118	116	97	193
234	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.006	0.000	0.000	0.000	0.000
246	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.004	0.000	0.000	0.000	0.000	0.004	0.000	0.004	0.000	0.005	0.000
250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
254	0.008	0.000	0.000	0.004	0.003	0.008	0.005	0.000	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.008	0.004	0.000	0.000
258	0.003	0.000	0.000	0.004	0.003	0.000	0.000	0.017	0.002	0.003	0.000	0.004	0.006	0.006	0.000	0.010	0.010	0.000	0.000	0.004	0.000	0.005
262	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.009	0.000	0.000	0.000	0.004	0.000	0.000	0.005	0.005	0.004	0.000	0.000	0.000	0.005	0.005
266	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.006	0.000	0.000	0.000	0.002	0.000	0.000	0.013	0.000	0.010
270	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.012	0.003	0.003	0.000	0.002	0.000	0.004	0.000	0.000	0.000
274	0.000	0.000	0.023	0.008	0.007	0.008	0.026	0.022	0.012	0.010	0.000	0.008	0.024	0.000	0.005	0.005	0.004	0.000	0.004	0.009	0.010	0.000
278	0.003	0.000	0.023	0.020	0.000	0.015	0.005	0.000	0.005	0.003	0.004	0.004	0.006	0.013	0.005	0.010	0.012	0.024	0.008	0.013	0.015	0.008
282	0.011	0.013	0.015	0.008	0.007	0.030	0.005	0.000	0.005	0.003	0.004	0.008	0.012	0.000	0.005	0.010	0.012	0.000	0.021	0.004	0.000	0.018
286	0.011	0.020	0.031	0.004	0.003	0.000	0.016	0.009	0.017	0.015	0.004	0.004	0.018	0.013	0.030	0.000	0.004	0.000	0.025	0.026	0.000	0.010
290	0.037	0.040	0.023	0.012	0.003	0.023	0.010	0.017	0.030	0.018	0.013	0.012	0.024	0.019	0.011	0.015	0.008	0.024	0.013	0.026	0.021	0.018
294	0.024	0.007	0.023	0.029	0.031	0.030	0.016	0.070	0.039	0.018	0.030	0.053	0.030	0.032	0.024	0.010	0.031	0.012	0.042	0.030	0.031	0.023
298	0.029	0.020	0.015	0.045	0.042	0.008	0.042	0.039	0.017	0.010	0.022	0.024	0.024	0.029	0.035	0.010	0.019	0.006	0.025	0.009	0.026	0.034
302	0.018	0.000	0.008	0.025	0.042	0.015	0.026	0.026	0.027	0.026	0.017	0.012	0.006	0.026	0.022	0.020	0.023	0.036	0.021	0.026	0.041	0.010
306	0.018	0.040	0.031	0.025	0.028	0.015	0.016	0.026	0.039	0.036	0.004	0.016	0.049	0.019	0.046	0.044	0.019	0.024	0.030	0.056	0.052	0.008
310	0.034	0.027	0.031	0.033	0.024	0.030	0.042	0.022	0.030	0.018	0.009	0.024	0.006	0.035	0.035	0.039	0.041	0.006	0.025	0.022	0.036	0.008
314	0.016	0.000	0.008	0.029	0.014	0.008	0.010	0.035	0.010	0.036	0.030	0.033	0.012	0.016	0.038	0.010	0.033	0.030	0.013	0.034	0.010	0.013
318	0.042	0.007	0.046	0.029	0.035	0.030	0.026	0.030	0.027	0.036	0.009	0.053	0.030	0.032	0.035	0.015	0.017	0.012	0.025	0.026	0.041	0.026
322	0.016	0.040	0.008	0.025	0.007	0.023	0.021	0.026	0.010	0.018	0.022	0.012	0.018	0.026	0.027	0.029	0.029	0.042	0.013	0.030	0.015	0.008
326	0.026	0.007	0.023	0.025	0.028	0.015	0.021	0.035	0.012	0.031	0.056	0.016	0.018	0.013	0.024	0.020	0.023	0.030	0.021	0.022	0.031	0.034

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
330	0.026	0.020	0.031	0.016	0.024	0.000	0.047	0.022	0.027	0.044	0.004	0.020	0.024	0.006	0.019	0.025	0.025	0.036	0.042	0.022	0.052	0.021
334	0.016	0.020	0.023	0.004	0.017	0.023	0.005	0.017	0.032	0.021	0.022	0.028	0.055	0.019	0.027	0.039	0.025	0.048	0.013	0.030	0.015	0.028
338	0.021	0.020	0.000	0.016	0.021	0.045	0.016	0.009	0.025	0.031	0.009	0.037	0.030	0.038	0.040	0.039	0.021	0.024	0.034	0.013	0.021	0.023
342	0.018	0.053	0.015	0.020	0.017	0.045	0.026	0.004	0.015	0.021	0.026	0.037	0.012	0.029	0.019	0.025	0.025	0.030	0.013	0.022	0.010	0.023
346	0.037	0.027	0.023	0.029	0.035	0.015	0.021	0.017	0.042	0.041	0.060	0.020	0.024	0.032	0.040	0.034	0.033	0.024	0.025	0.030	0.031	0.047
350	0.068	0.040	0.062	0.037	0.052	0.038	0.026	0.009	0.047	0.036	0.056	0.057	0.049	0.054	0.051	0.049	0.031	0.036	0.055	0.043	0.026	0.075
354	0.039	0.027	0.062	0.037	0.056	0.045	0.047	0.035	0.039	0.041	0.052	0.016	0.055	0.045	0.032	0.034	0.041	0.030	0.034	0.039	0.031	0.031
358	0.024	0.047	0.031	0.041	0.035	0.045	0.047	0.043	0.034	0.026	0.030	0.028	0.018	0.051	0.019	0.015	0.027	0.030	0.051	0.034	0.046	0.031
362	0.042	0.040	0.038	0.033	0.028	0.008	0.036	0.048	0.049	0.054	0.056	0.045	0.030	0.054	0.054	0.039	0.041	0.054	0.030	0.047	0.036	0.044
366	0.061	0.047	0.038	0.033	0.035	0.038	0.042	0.030	0.042	0.031	0.047	0.028	0.043	0.032	0.030	0.049	0.039	0.030	0.038	0.022	0.026	0.031
370	0.032	0.080	0.023	0.041	0.052	0.045	0.016	0.026	0.032	0.054	0.022	0.028	0.024	0.016	0.011	0.034	0.023	0.036	0.013	0.026	0.046	0.023
374	0.024	0.020	0.038	0.029	0.038	0.045	0.010	0.035	0.022	0.018	0.017	0.037	0.024	0.032	0.024	0.034	0.033	0.030	0.013	0.043	0.026	0.075
378	0.032	0.020	0.046	0.037	0.035	0.030	0.047	0.035	0.032	0.034	0.030	0.061	0.024	0.022	0.019	0.054	0.033	0.018	0.013	0.022	0.046	0.023
382	0.045	0.013	0.038	0.020	0.010	0.023	0.036	0.026	0.010	0.023	0.043	0.020	0.049	0.013	0.027	0.025	0.039	0.054	0.025	0.013	0.031	0.023
386	0.032	0.013	0.038	0.057	0.049	0.053	0.021	0.009	0.017	0.010	0.013	0.020	0.006	0.006	0.011	0.029	0.033	0.018	0.021	0.026	0.021	0.003
390	0.016	0.000	0.023	0.020	0.021	0.008	0.057	0.052	0.027	0.021	0.017	0.028	0.018	0.022	0.022	0.005	0.039	0.024	0.038	0.026	0.010	0.013
394	0.026	0.040	0.015	0.025	0.038	0.023	0.047	0.026	0.044	0.026	0.065	0.033	0.037	0.035	0.040	0.044	0.041	0.024	0.030	0.022	0.026	0.013
398	0.008	0.013	0.023	0.033	0.021	0.030	0.005	0.035	0.025	0.018	0.022	0.041	0.000	0.035	0.024	0.015	0.021	0.024	0.025	0.009	0.021	0.036
402	0.021	0.027	0.000	0.020	0.021	0.023	0.021	0.017	0.020	0.013	0.013	0.004	0.024	0.026	0.011	0.020	0.014	0.018	0.021	0.030	0.031	0.008
406	0.018	0.027	0.008	0.033	0.017	0.023	0.021	0.009	0.030	0.018	0.004	0.016	0.018	0.016	0.016	0.005	0.019	0.030	0.021	0.009	0.015	0.010
410	0.024	0.040	0.015	0.025	0.014	0.038	0.021	0.022	0.025	0.031	0.065	0.020	0.043	0.035	0.016	0.029	0.023	0.012	0.038	0.017	0.005	0.016
414	0.005	0.013	0.008	0.008	0.028	0.023	0.042	0.017	0.002	0.031	0.022	0.028	0.000	0.019	0.019	0.039	0.008	0.018	0.008	0.004	0.005	0.018
418	0.013	0.027	0.008	0.008	0.014	0.000	0.005	0.026	0.007	0.003	0.013	0.012	0.018	0.010	0.005	0.020	0.014	0.018	0.008	0.013	0.000	0.036
422	0.008	0.013	0.008	0.004	0.003	0.008	0.000	0.013	0.005	0.000	0.000	0.004	0.000	0.006	0.003	0.000	0.008	0.006	0.008	0.022	0.010	0.008
426	0.011	0.007	0.008	0.000	0.000	0.023	0.000	0.004	0.007	0.015	0.004	0.004	0.006	0.000	0.008	0.010	0.004	0.018	0.000	0.009	0.000	0.016
430	0.011	0.007	0.000	0.012	0.000	0.000	0.005	0.004	0.007	0.008	0.000	0.008	0.000	0.006	0.013	0.005	0.004	0.012	0.013	0.004	0.005	0.008
434	0.005	0.013	0.008	0.012	0.003	0.000	0.010	0.004	0.000	0.000	0.004	0.000	0.012	0.003	0.008	0.005	0.006	0.000	0.008	0.009	0.005	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
438	0.000	0.000	0.015	0.004	0.010	0.000	0.010	0.000	0.007	0.005	0.034	0.000	0.000	0.003	0.000	0.000	0.006	0.012	0.000	0.009	0.000	0.000
442	0.000	0.007	0.000	0.000	0.003	0.000	0.005	0.009	0.005	0.010	0.004	0.008	0.000	0.003	0.005	0.005	0.006	0.024	0.013	0.009	0.015	0.000
446	0.000	0.020	0.015	0.000	0.003	0.023	0.000	0.004	0.002	0.003	0.004	0.000	0.006	0.010	0.005	0.010	0.004	0.000	0.004	0.000	0.000	0.000
450	0.005	0.007	0.008	0.004	0.000	0.015	0.010	0.004	0.005	0.005	0.000	0.000	0.006	0.006	0.005	0.000	0.004	0.006	0.004	0.004	0.005	0.008
454	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.006	0.003	0.000	0.000	0.004	0.000	0.000	0.004	0.000	0.028
458	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.002	0.003	0.000	0.004	0.006	0.000	0.000	0.005	0.002	0.006	0.004	0.000	0.000	0.016
462	0.000	0.007	0.008	0.000	0.003	0.000	0.000	0.000	0.002	0.000	0.009	0.000	0.000	0.006	0.013	0.000	0.002	0.000	0.004	0.000	0.015	0.000
466	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.003	0.000	0.000	0.002	0.006	0.008	0.000	0.005	0.003
470	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.004	0.000	0.003	0.000	0.000	0.000	0.000	0.003	0.005	0.002	0.000	0.004	0.000	0.000	0.003
474	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.012	0.003	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.018
478	0.000	0.000	0.000	0.012	0.000	0.000	0.005	0.000	0.007	0.000	0.009	0.004	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.013	0.010	0.003
482	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.002	0.003	0.000	0.004	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
486	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000
494	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
498	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
502	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
506	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.006	0.000	0.003	0.005	0.000	0.000	0.004	0.000	0.000	0.000
510	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
Locus: *Ots7e*																						
n	183	80	65	125	143	75	104	115	203	191	117	125	82	166	187	102	263	84	119	117	101	194
230	0.000	0.000	0.000	0.004	0.003	0.000	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
231	0.000	0.000	0.000	0.004	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.010	0.008
232	0.279	0.269	0.323	0.224	0.189	0.233	0.197	0.261	0.251	0.215	0.282	0.216	0.201	0.265	0.283	0.250	0.238	0.238	0.227	0.256	0.203	0.358
234	0.669	0.550	0.569	0.640	0.671	0.647	0.750	0.578	0.658	0.681	0.637	0.680	0.750	0.645	0.610	0.657	0.663	0.643	0.685	0.645	0.658	0.510
235	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000
236	0.025	0.113	0.038	0.072	0.052	0.067	0.010	0.048	0.044	0.052	0.064	0.040	0.012	0.045	0.072	0.044	0.051	0.071	0.038	0.056	0.064	0.093
238	0.000	0.000	0.000	0.004	0.000	0.000	0.010	0.004	0.002	0.005	0.000	0.004	0.006	0.000	0.003	0.000	0.004	0.000	0.000	0.004	0.000	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
240	0.025	0.063	0.062	0.032	0.070	0.040	0.034	0.065	0.044	0.047	0.017	0.052	0.030	0.042	0.032	0.039	0.029	0.048	0.042	0.034	0.054	0.026
242	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
244	0.003	0.006	0.000	0.020	0.007	0.013	0.000	0.030	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.010	0.006	0.000	0.008	0.004	0.005	0.000
256	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
Locus: *OtsG253b*																						
n	190	77	65	125	143	74	104	115	203	194	117	124	82	164	187	102	261	84	117	116	99	193
141	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.005
161	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.004	0.000	0.000	0.004	0.008	0.000	0.000	0.000	0.010	0.004	0.000	0.004	0.000	0.005	0.003
169	0.000	0.006	0.015	0.016	0.003	0.000	0.005	0.013	0.002	0.008	0.004	0.008	0.000	0.006	0.011	0.005	0.004	0.012	0.000	0.000	0.005	0.005
173	0.005	0.000	0.023	0.004	0.007	0.007	0.010	0.000	0.007	0.000	0.004	0.012	0.000	0.006	0.005	0.005	0.010	0.012	0.009	0.000	0.000	0.000
177	0.016	0.032	0.000	0.012	0.010	0.007	0.010	0.013	0.005	0.015	0.000	0.016	0.018	0.009	0.013	0.010	0.013	0.000	0.000	0.004	0.015	0.008
181	0.021	0.013	0.031	0.016	0.007	0.014	0.005	0.009	0.010	0.015	0.021	0.020	0.012	0.003	0.016	0.010	0.031	0.018	0.013	0.000	0.025	0.013
185	0.013	0.000	0.038	0.016	0.010	0.041	0.034	0.017	0.017	0.005	0.017	0.024	0.000	0.024	0.013	0.020	0.013	0.006	0.004	0.013	0.005	0.052
189	0.029	0.000	0.008	0.032	0.014	0.034	0.029	0.026	0.027	0.031	0.030	0.028	0.024	0.043	0.027	0.049	0.034	0.024	0.026	0.034	0.035	0.021
193	0.074	0.026	0.038	0.052	0.038	0.047	0.043	0.013	0.047	0.028	0.038	0.024	0.055	0.052	0.040	0.020	0.034	0.048	0.017	0.069	0.025	0.044
197	0.042	0.032	0.031	0.060	0.052	0.054	0.019	0.061	0.049	0.031	0.017	0.036	0.012	0.055	0.045	0.044	0.033	0.048	0.026	0.056	0.035	0.028
201	0.061	0.058	0.023	0.056	0.035	0.014	0.029	0.048	0.039	0.034	0.056	0.040	0.043	0.052	0.059	0.083	0.050	0.042	0.064	0.047	0.061	0.070
205	0.047	0.019	0.046	0.048	0.045	0.020	0.053	0.074	0.052	0.054	0.047	0.044	0.067	0.061	0.040	0.093	0.052	0.065	0.064	0.091	0.015	0.036
209	0.042	0.065	0.038	0.100	0.066	0.054	0.077	0.109	0.059	0.064	0.094	0.089	0.043	0.070	0.051	0.044	0.080	0.065	0.060	0.069	0.086	0.070
213	0.063	0.052	0.062	0.072	0.059	0.054	0.115	0.061	0.037	0.093	0.047	0.077	0.037	0.040	0.064	0.054	0.050	0.048	0.064	0.091	0.061	0.049
217	0.050	0.110	0.054	0.056	0.038	0.074	0.058	0.065	0.076	0.070	0.103	0.048	0.104	0.095	0.096	0.044	0.048	0.048	0.073	0.078	0.056	0.052
221	0.092	0.071	0.085	0.072	0.059	0.047	0.053	0.091	0.089	0.059	0.043	0.065	0.030	0.052	0.056	0.059	0.096	0.095	0.064	0.065	0.071	0.070
225	0.076	0.071	0.100	0.084	0.091	0.068	0.072	0.078	0.126	0.064	0.073	0.036	0.104	0.073	0.064	0.108	0.069	0.036	0.098	0.082	0.061	0.036
229	0.055	0.045	0.038	0.036	0.070	0.034	0.087	0.070	0.059	0.023	0.124	0.048	0.049	0.052	0.075	0.049	0.063	0.060	0.064	0.039	0.056	0.078

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
233	0.050	0.045	0.069	0.056	0.049	0.074	0.048	0.017	0.047	0.059	0.085	0.052	0.098	0.030	0.053	0.059	0.057	0.054	0.043	0.034	0.030	0.031
237	0.047	0.052	0.069	0.028	0.059	0.034	0.043	0.026	0.037	0.067	0.047	0.056	0.073	0.055	0.043	0.034	0.057	0.065	0.047	0.022	0.051	0.067
241	0.032	0.032	0.015	0.024	0.035	0.041	0.024	0.022	0.030	0.034	0.038	0.060	0.049	0.027	0.029	0.054	0.021	0.036	0.051	0.017	0.020	0.054
245	0.021	0.039	0.031	0.020	0.042	0.054	0.034	0.043	0.022	0.046	0.009	0.028	0.030	0.034	0.029	0.029	0.044	0.018	0.038	0.047	0.035	0.008
249	0.053	0.045	0.085	0.024	0.045	0.047	0.024	0.035	0.042	0.075	0.017	0.040	0.043	0.040	0.027	0.034	0.023	0.071	0.051	0.039	0.051	0.026
253	0.024	0.039	0.023	0.032	0.038	0.054	0.014	0.009	0.020	0.028	0.021	0.020	0.030	0.024	0.035	0.010	0.021	0.036	0.017	0.030	0.035	0.005
257	0.013	0.052	0.023	0.008	0.024	0.020	0.014	0.000	0.032	0.023	0.013	0.024	0.012	0.015	0.013	0.039	0.034	0.012	0.030	0.009	0.030	0.044
261	0.024	0.006	0.015	0.028	0.007	0.000	0.019	0.013	0.005	0.018	0.017	0.024	0.024	0.021	0.048	0.015	0.011	0.024	0.017	0.013	0.045	0.013
265	0.005	0.000	0.008	0.008	0.010	0.020	0.014	0.035	0.017	0.005	0.009	0.016	0.006	0.024	0.016	0.000	0.008	0.006	0.017	0.009	0.030	0.016
269	0.016	0.013	0.015	0.004	0.014	0.034	0.019	0.004	0.010	0.026	0.000	0.008	0.006	0.009	0.005	0.005	0.011	0.012	0.017	0.004	0.030	0.028
273	0.000	0.006	0.008	0.008	0.017	0.014	0.005	0.009	0.002	0.008	0.009	0.008	0.000	0.006	0.005	0.005	0.002	0.024	0.013	0.013	0.010	0.016
275	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
277	0.016	0.032	0.000	0.008	0.007	0.027	0.019	0.022	0.005	0.005	0.004	0.008	0.006	0.015	0.011	0.005	0.008	0.000	0.000	0.009	0.005	0.008
281	0.008	0.013	0.000	0.000	0.014	0.000	0.000	0.009	0.015	0.003	0.004	0.008	0.006	0.003	0.005	0.005	0.010	0.006	0.009	0.004	0.005	0.010
285	0.003	0.000	0.008	0.008	0.007	0.014	0.010	0.004	0.005	0.003	0.000	0.012	0.006	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.005	0.026
289	0.000	0.019	0.000	0.008	0.007	0.000	0.005	0.000	0.002	0.000	0.000	0.004	0.000	0.000	0.003	0.000	0.002	0.000	0.000	0.009	0.000	0.000
291	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
293	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.003	0.004	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
295	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
297	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
299	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
301	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
303	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000
305	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
309	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
311	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Locus: *OtsG311*																						
n	186	80	65	125	143	75	104	115	203	193	117	125	82	168	187	102	263	84	119	117	101	194
168	0.003	0.000	0.000	0.004	0.010	0.007	0.005	0.004	0.002	0.008	0.026	0.016	0.000	0.009	0.013	0.005	0.011	0.006	0.004	0.017	0.000	0.021
172	0.005	0.000	0.000	0.016	0.003	0.007	0.034	0.043	0.007	0.010	0.004	0.020	0.018	0.012	0.013	0.015	0.013	0.024	0.004	0.009	0.010	0.000
176	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	0.032	0.019	0.038	0.028	0.031	0.033	0.019	0.017	0.034	0.026	0.043	0.024	0.049	0.045	0.040	0.010	0.032	0.030	0.029	0.043	0.015	0.008
182	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
184	0.059	0.050	0.069	0.064	0.052	0.040	0.058	0.074	0.074	0.041	0.051	0.068	0.055	0.051	0.051	0.064	0.057	0.054	0.029	0.030	0.054	0.064
188	0.180	0.188	0.077	0.168	0.157	0.147	0.125	0.100	0.150	0.127	0.154	0.156	0.140	0.161	0.123	0.137	0.148	0.107	0.155	0.167	0.183	0.170
192	0.089	0.119	0.115	0.092	0.094	0.127	0.087	0.122	0.067	0.088	0.090	0.132	0.146	0.110	0.107	0.103	0.122	0.161	0.109	0.120	0.109	0.103
196	0.073	0.069	0.115	0.076	0.066	0.127	0.106	0.078	0.099	0.096	0.034	0.084	0.061	0.057	0.083	0.098	0.080	0.065	0.097	0.073	0.099	0.160
200	0.070	0.050	0.085	0.072	0.066	0.093	0.115	0.074	0.049	0.085	0.111	0.088	0.055	0.071	0.064	0.098	0.072	0.095	0.046	0.098	0.059	0.057
204	0.067	0.056	0.100	0.080	0.063	0.053	0.063	0.057	0.076	0.093	0.043	0.064	0.024	0.071	0.045	0.044	0.067	0.060	0.080	0.038	0.099	0.098
208	0.105	0.063	0.062	0.104	0.129	0.100	0.087	0.113	0.101	0.117	0.038	0.076	0.073	0.077	0.080	0.093	0.101	0.077	0.080	0.094	0.079	0.095
212	0.091	0.138	0.046	0.072	0.087	0.027	0.096	0.052	0.081	0.073	0.103	0.092	0.055	0.077	0.086	0.083	0.059	0.065	0.067	0.098	0.094	0.095
214	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000
216	0.078	0.037	0.092	0.072	0.045	0.053	0.038	0.070	0.059	0.023	0.107	0.060	0.104	0.080	0.099	0.069	0.059	0.089	0.076	0.056	0.069	0.031
220	0.043	0.113	0.038	0.048	0.070	0.107	0.053	0.070	0.069	0.088	0.081	0.048	0.110	0.057	0.075	0.078	0.065	0.042	0.092	0.051	0.025	0.021
224	0.065	0.044	0.046	0.036	0.038	0.033	0.029	0.052	0.049	0.023	0.038	0.040	0.049	0.060	0.045	0.034	0.032	0.054	0.067	0.051	0.050	0.031
228	0.013	0.019	0.038	0.020	0.024	0.013	0.019	0.026	0.042	0.044	0.017	0.004	0.030	0.018	0.019	0.025	0.029	0.024	0.025	0.026	0.010	0.013
232	0.003	0.013	0.015	0.020	0.024	0.013	0.010	0.013	0.007	0.013	0.038	0.008	0.012	0.024	0.019	0.010	0.021	0.018	0.013	0.013	0.005	0.013
236	0.013	0.013	0.031	0.004	0.003	0.000	0.029	0.022	0.007	0.013	0.004	0.008	0.000	0.006	0.016	0.010	0.019	0.006	0.008	0.000	0.005	0.015
238	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
240	0.003	0.006	0.008	0.008	0.024	0.020	0.024	0.000	0.017	0.008	0.009	0.008	0.006	0.006	0.011	0.015	0.004	0.012	0.008	0.013	0.020	0.000
242	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
244	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.004	0.000	0.013	0.004	0.000	0.012	0.009	0.000	0.000	0.004	0.012	0.004	0.004	0.010	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
248	0.003	0.006	0.015	0.004	0.000	0.000	0.005	0.004	0.000	0.003	0.000	0.000	0.000	0.000	0.003	0.000	0.002	0.000	0.004	0.000	0.000	0.003
252	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.004	0.000	0.000	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000
256	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
260	0.000	0.000	0.008	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.000

Locus:
OtsG68

n	189	79	65	125	143	75	104	114	203	194	117	119	82	168	187	102	259	83	119	117	100	188
137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000
141	0.008	0.013	0.008	0.008	0.003	0.007	0.000	0.000	0.000	0.008	0.000	0.004	0.000	0.003	0.005	0.000	0.004	0.006	0.021	0.004	0.005	0.016
145	0.013	0.013	0.008	0.008	0.000	0.007	0.000	0.009	0.012	0.005	0.004	0.008	0.012	0.018	0.019	0.010	0.015	0.018	0.004	0.021	0.025	0.000
149	0.021	0.000	0.008	0.024	0.017	0.027	0.014	0.013	0.017	0.013	0.000	0.017	0.006	0.006	0.000	0.010	0.014	0.000	0.029	0.004	0.015	0.013
153	0.034	0.013	0.038	0.072	0.059	0.020	0.029	0.018	0.032	0.023	0.043	0.038	0.079	0.042	0.024	0.029	0.037	0.048	0.042	0.077	0.045	0.053
157	0.024	0.025	0.023	0.048	0.035	0.020	0.034	0.026	0.034	0.013	0.043	0.021	0.049	0.021	0.045	0.020	0.035	0.042	0.017	0.021	0.025	0.032
161	0.034	0.000	0.038	0.036	0.045	0.027	0.053	0.039	0.027	0.039	0.047	0.038	0.030	0.030	0.029	0.054	0.033	0.042	0.025	0.026	0.020	0.056
165	0.050	0.032	0.031	0.024	0.045	0.013	0.038	0.031	0.052	0.049	0.051	0.059	0.037	0.060	0.064	0.078	0.048	0.042	0.029	0.043	0.060	0.029
169	0.066	0.133	0.069	0.076	0.077	0.073	0.048	0.096	0.074	0.090	0.098	0.101	0.037	0.089	0.115	0.059	0.079	0.042	0.080	0.073	0.045	0.051
173	0.066	0.089	0.092	0.060	0.105	0.087	0.125	0.061	0.071	0.082	0.081	0.088	0.122	0.101	0.096	0.103	0.066	0.120	0.076	0.081	0.050	0.074
177	0.077	0.070	0.085	0.096	0.073	0.080	0.063	0.092	0.116	0.059	0.098	0.080	0.110	0.101	0.088	0.088	0.110	0.120	0.109	0.111	0.140	0.045
181	0.106	0.127	0.062	0.096	0.084	0.087	0.106	0.096	0.052	0.119	0.038	0.126	0.073	0.068	0.086	0.108	0.089	0.078	0.097	0.068	0.060	0.125
185	0.098	0.019	0.092	0.092	0.066	0.100	0.091	0.101	0.145	0.106	0.056	0.076	0.061	0.098	0.048	0.098	0.079	0.114	0.080	0.094	0.125	0.090
189	0.087	0.108	0.085	0.096	0.101	0.113	0.115	0.083	0.086	0.085	0.137	0.092	0.085	0.077	0.080	0.083	0.073	0.078	0.076	0.068	0.075	0.064
193	0.090	0.051	0.077	0.072	0.042	0.073	0.048	0.083	0.089	0.059	0.034	0.059	0.079	0.063	0.080	0.059	0.085	0.090	0.067	0.103	0.065	0.080
197	0.074	0.120	0.077	0.036	0.049	0.073	0.077	0.031	0.057	0.064	0.107	0.063	0.043	0.074	0.061	0.049	0.050	0.036	0.067	0.068	0.080	0.066
201	0.050	0.044	0.062	0.020	0.049	0.060	0.063	0.061	0.037	0.062	0.030	0.008	0.073	0.018	0.043	0.039	0.042	0.024	0.042	0.017	0.040	0.024
205	0.034	0.051	0.015	0.044	0.035	0.033	0.029	0.057	0.020	0.039	0.013	0.034	0.043	0.042	0.029	0.034	0.033	0.024	0.050	0.034	0.025	0.024
209	0.026	0.025	0.023	0.028	0.024	0.020	0.019	0.026	0.025	0.026	0.013	0.008	0.018	0.018	0.032	0.025	0.031	0.024	0.017	0.034	0.035	0.013
213	0.011	0.013	0.031	0.012	0.031	0.013	0.000	0.022	0.010	0.021	0.004	0.021	0.006	0.003	0.011	0.020	0.019	0.018	0.021	0.013	0.010	0.024

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
217	0.008	0.025	0.008	0.008	0.007	0.013	0.000	0.000	0.002	0.008	0.004	0.004	0.012	0.012	0.008	0.005	0.006	0.006	0.021	0.000	0.000	0.045
221	0.008	0.013	0.008	0.024	0.014	0.007	0.014	0.004	0.012	0.003	0.030	0.013	0.000	0.030	0.005	0.020	0.010	0.006	0.013	0.009	0.020	0.037
225	0.003	0.000	0.008	0.008	0.014	0.007	0.010	0.004	0.012	0.003	0.004	0.008	0.000	0.006	0.003	0.000	0.017	0.012	0.004	0.000	0.010	0.000
229	0.005	0.006	0.023	0.008	0.007	0.020	0.005	0.018	0.010	0.005	0.026	0.008	0.006	0.012	0.003	0.005	0.008	0.000	0.008	0.004	0.015	0.003
233	0.005	0.006	0.023	0.004	0.007	0.000	0.010	0.009	0.000	0.005	0.013	0.004	0.006	0.003	0.003	0.005	0.002	0.000	0.004	0.004	0.000	0.011
237	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.009	0.000	0.003	0.017	0.000	0.006	0.003	0.003	0.000	0.004	0.000	0.000	0.009	0.005	0.021
241	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.008	0.009	0.017	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.004	0.000	0.000
245	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.004	0.000	0.000	0.004	0.005	0.003
249	0.000	0.000	0.008	0.000	0.000	0.013	0.005	0.000	0.002	0.005	0.000	0.004	0.006	0.003	0.011	0.000	0.004	0.000	0.000	0.004	0.000	0.000
253	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
257	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
269	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
Locus: *Ssa407*																						
n	164	71	63	125	143	73	93	114	197	184	112	124	82	151	187	100	261	84	118	113	100	193
328	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
332	0.006	0.000	0.000	0.004	0.003	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.006	0.004	0.000	0.000	0.003
336	0.003	0.000	0.024	0.004	0.014	0.000	0.000	0.013	0.003	0.008	0.018	0.004	0.006	0.000	0.005	0.000	0.000	0.000	0.017	0.013	0.005	0.005
340	0.000	0.007	0.000	0.020	0.010	0.000	0.022	0.018	0.015	0.011	0.000	0.004	0.000	0.007	0.005	0.010	0.010	0.006	0.000	0.000	0.000	0.013
344	0.006	0.014	0.000	0.008	0.007	0.000	0.011	0.018	0.013	0.011	0.018	0.004	0.024	0.017	0.003	0.000	0.002	0.000	0.017	0.009	0.015	0.000
348	0.003	0.014	0.016	0.016	0.010	0.007	0.011	0.009	0.015	0.014	0.000	0.008	0.006	0.017	0.003	0.010	0.004	0.012	0.013	0.013	0.000	0.000
352	0.018	0.014	0.000	0.012	0.010	0.027	0.016	0.018	0.033	0.005	0.094	0.020	0.030	0.026	0.021	0.025	0.029	0.012	0.004	0.022	0.020	0.005
356	0.006	0.063	0.016	0.016	0.021	0.027	0.005	0.026	0.013	0.011	0.076	0.012	0.012	0.030	0.029	0.025	0.029	0.012	0.008	0.027	0.015	0.031
360	0.021	0.021	0.024	0.024	0.035	0.027	0.016	0.048	0.008	0.027	0.027	0.024	0.012	0.013	0.016	0.025	0.031	0.012	0.008	0.027	0.025	0.018
362	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
364	0.046	0.070	0.048	0.028	0.042	0.027	0.054	0.031	0.033	0.016	0.013	0.032	0.043	0.043	0.037	0.040	0.040	0.048	0.047	0.053	0.025	0.018
368	0.046	0.056	0.087	0.060	0.024	0.048	0.038	0.057	0.051	0.041	0.013	0.044	0.043	0.053	0.045	0.070	0.048	0.060	0.030	0.031	0.035	0.008
372	0.046	0.063	0.056	0.088	0.028	0.062	0.065	0.053	0.053	0.073	0.022	0.089	0.061	0.043	0.064	0.040	0.046	0.071	0.081	0.058	0.100	0.065

673 -continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
374	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
376	0.064	0.063	0.048	0.060	0.070	0.062	0.043	0.057	0.051	0.084	0.049	0.089	0.079	0.040	0.072	0.060	0.057	0.077	0.051	0.071	0.080	0.034
380	0.085	0.085	0.071	0.052	0.070	0.082	0.054	0.088	0.084	0.054	0.076	0.052	0.061	0.066	0.078	0.070	0.061	0.060	0.076	0.071	0.060	0.104
382	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
384	0.082	0.106	0.071	0.088	0.070	0.048	0.086	0.070	0.069	0.092	0.085	0.085	0.049	0.066	0.080	0.080	0.077	0.095	0.059	0.062	0.090	0.085
386	0.003	0.007	0.000	0.008	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.004	0.006	0.000	0.004	0.000	0.000
388	0.082	0.049	0.032	0.064	0.087	0.062	0.081	0.053	0.099	0.098	0.045	0.085	0.085	0.056	0.037	0.060	0.071	0.077	0.089	0.093	0.075	0.111
390	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
392	0.070	0.056	0.056	0.060	0.059	0.055	0.070	0.057	0.061	0.084	0.054	0.089	0.061	0.083	0.083	0.070	0.069	0.065	0.097	0.080	0.055	0.047
394	0.000	0.000	0.000	0.004	0.003	0.000	0.000	0.009	0.000	0.003	0.000	0.000	0.006	0.000	0.003	0.005	0.004	0.000	0.000	0.004	0.000	0.000
396	0.037	0.085	0.056	0.036	0.028	0.062	0.065	0.053	0.048	0.057	0.058	0.073	0.104	0.083	0.061	0.065	0.063	0.083	0.055	0.044	0.035	0.093
398	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
400	0.070	0.056	0.048	0.044	0.073	0.082	0.070	0.053	0.076	0.027	0.063	0.052	0.085	0.073	0.075	0.070	0.071	0.024	0.055	0.053	0.040	0.060
404	0.067	0.028	0.079	0.056	0.063	0.055	0.065	0.018	0.038	0.071	0.076	0.040	0.079	0.073	0.045	0.055	0.077	0.024	0.068	0.058	0.095	0.054
406	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
408	0.040	0.028	0.063	0.048	0.066	0.041	0.054	0.031	0.046	0.024	0.040	0.044	0.012	0.043	0.051	0.070	0.033	0.071	0.076	0.035	0.035	0.067
410	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
412	0.034	0.056	0.024	0.036	0.052	0.055	0.038	0.026	0.036	0.038	0.040	0.044	0.012	0.026	0.061	0.030	0.042	0.054	0.030	0.027	0.055	0.034
416	0.049	0.021	0.071	0.028	0.035	0.021	0.022	0.031	0.033	0.046	0.045	0.032	0.018	0.043	0.027	0.015	0.050	0.042	0.038	0.044	0.030	0.067
418	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
420	0.034	0.014	0.024	0.040	0.042	0.055	0.038	0.048	0.046	0.043	0.027	0.012	0.024	0.036	0.016	0.035	0.025	0.018	0.008	0.022	0.040	0.018
422	0.003	0.000	0.000	0.004	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.005	0.000
424	0.030	0.007	0.000	0.032	0.024	0.048	0.016	0.026	0.018	0.000	0.013	0.008	0.037	0.017	0.008	0.030	0.010	0.024	0.042	0.031	0.015	0.010
426	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
428	0.021	0.007	0.024	0.016	0.003	0.014	0.022	0.013	0.013	0.011	0.000	0.008	0.006	0.010	0.013	0.000	0.015	0.012	0.008	0.004	0.015	0.016
432	0.009	0.000	0.040	0.004	0.017	0.034	0.011	0.018	0.015	0.022	0.018	0.020	0.000	0.007	0.027	0.015	0.013	0.012	0.004	0.013	0.015	0.008
436	0.006	0.000	0.016	0.016	0.007	0.000	0.000	0.004	0.005	0.011	0.004	0.004	0.000	0.007	0.008	0.020	0.006	0.006	0.008	0.009	0.005	0.008

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
440	0.000	0.000	0.008	0.004	0.003	0.000	0.016	0.009	0.005	0.003	0.004	0.000	0.006	0.003	0.011	0.005	0.008	0.000	0.000	0.004	0.000	0.010
444	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.004	0.000	0.003	0.013	0.008	0.024	0.007	0.008	0.000	0.002	0.012	0.000	0.004	0.000	0.005
448	0.000	0.000	0.000	0.004	0.000	0.000	0.005	0.004	0.005	0.003	0.004	0.000	0.000	0.007	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.003
452	0.006	0.007	0.000	0.004	0.000	0.000	0.005	0.000	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.005	0.000
456	0.003	0.000	0.000	0.004	0.003	0.000	0.000	0.009	0.003	0.000	0.000	0.004	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
460	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000
468	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Locus: *Ssa408*																						
n	189	67	62	125	143	67	93	114	204	194	102	121	81	156	187	101	255	84	118	111	100	194
274	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
282	0.000	0.000	0.000	0.004	0.010	0.000	0.005	0.000	0.000	0.003	0.000	0.004	0.006	0.006	0.011	0.005	0.000	0.006	0.004	0.000	0.000	0.000
286	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
290	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.003
294	0.003	0.000	0.008	0.004	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.005	0.000	0.000
298	0.005	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.002	0.010	0.000	0.000	0.006	0.000	0.000	0.000	0.006	0.006	0.000	0.005	0.000	0.000
302	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.005	0.005	0.010
306	0.011	0.022	0.000	0.004	0.007	0.015	0.005	0.004	0.005	0.003	0.000	0.000	0.012	0.006	0.003	0.005	0.000	0.000	0.008	0.027	0.010	0.003
310	0.003	0.007	0.000	0.004	0.000	0.007	0.005	0.004	0.010	0.008	0.000	0.012	0.000	0.013	0.013	0.015	0.016	0.018	0.000	0.009	0.010	0.003
314	0.005	0.000	0.000	0.008	0.003	0.000	0.000	0.004	0.005	0.010	0.029	0.012	0.000	0.003	0.008	0.010	0.008	0.000	0.000	0.005	0.010	0.010
318	0.021	0.007	0.016	0.016	0.017	0.022	0.022	0.031	0.012	0.015	0.005	0.025	0.019	0.013	0.003	0.020	0.010	0.006	0.017	0.000	0.020	0.000
322	0.013	0.000	0.008	0.012	0.007	0.007	0.005	0.009	0.005	0.005	0.049	0.004	0.000	0.016	0.013	0.025	0.008	0.000	0.013	0.005	0.005	0.008
326	0.021	0.007	0.016	0.008	0.000	0.015	0.032	0.022	0.022	0.000	0.025	0.017	0.006	0.026	0.024	0.025	0.020	0.012	0.021	0.032	0.005	0.010
330	0.011	0.007	0.000	0.024	0.014	0.022	0.005	0.013	0.010	0.008	0.039	0.012	0.000	0.016	0.011	0.010	0.018	0.006	0.008	0.014	0.020	0.005
334	0.013	0.015	0.008	0.028	0.021	0.015	0.016	0.035	0.029	0.015	0.000	0.021	0.006	0.003	0.008	0.020	0.010	0.000	0.021	0.027	0.015	0.015
338	0.011	0.030	0.024	0.008	0.031	0.022	0.011	0.013	0.010	0.021	0.020	0.021	0.019	0.022	0.016	0.020	0.025	0.024	0.017	0.023	0.010	0.010
342	0.032	0.067	0.024	0.040	0.021	0.022	0.011	0.031	0.032	0.015	0.010	0.017	0.012	0.026	0.024	0.025	0.024	0.036	0.038	0.032	0.015	0.008

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
346	0.056	0.030	0.032	0.028	0.035	0.045	0.027	0.044	0.025	0.039	0.029	0.037	0.019	0.019	0.048	0.035	0.025	0.036	0.021	0.036	0.020	0.008
350	0.026	0.022	0.032	0.024	0.035	0.037	0.022	0.066	0.034	0.041	0.083	0.029	0.025	0.054	0.029	0.030	0.018	0.030	0.017	0.027	0.030	0.026
354	0.040	0.030	0.024	0.044	0.035	0.007	0.022	0.022	0.064	0.052	0.054	0.041	0.019	0.032	0.040	0.020	0.033	0.030	0.025	0.018	0.040	0.028
358	0.032	0.067	0.056	0.012	0.038	0.037	0.027	0.048	0.027	0.057	0.078	0.029	0.056	0.058	0.037	0.015	0.043	0.036	0.021	0.045	0.045	0.046
362	0.032	0.007	0.024	0.020	0.024	0.000	0.016	0.022	0.044	0.044	0.025	0.041	0.043	0.035	0.027	0.045	0.039	0.054	0.013	0.018	0.030	0.034
366	0.034	0.045	0.024	0.048	0.031	0.022	0.043	0.035	0.049	0.057	0.029	0.045	0.006	0.032	0.019	0.035	0.045	0.048	0.038	0.054	0.030	0.026
370	0.048	0.052	0.056	0.036	0.042	0.015	0.005	0.013	0.042	0.034	0.010	0.033	0.025	0.051	0.037	0.025	0.033	0.030	0.055	0.036	0.040	0.054
374	0.042	0.022	0.032	0.044	0.038	0.022	0.032	0.044	0.032	0.015	0.025	0.037	0.068	0.042	0.056	0.030	0.033	0.030	0.038	0.036	0.030	0.044
378	0.034	0.075	0.032	0.020	0.038	0.030	0.054	0.026	0.015	0.044	0.044	0.025	0.043	0.029	0.051	0.020	0.025	0.012	0.025	0.014	0.040	0.028
382	0.019	0.030	0.056	0.012	0.035	0.037	0.048	0.044	0.015	0.018	0.015	0.037	0.025	0.029	0.035	0.030	0.031	0.042	0.013	0.036	0.030	0.072
386	0.029	0.052	0.040	0.044	0.049	0.030	0.043	0.044	0.056	0.052	0.049	0.037	0.056	0.035	0.013	0.040	0.027	0.030	0.047	0.036	0.035	0.031
390	0.056	0.030	0.040	0.040	0.035	0.030	0.032	0.031	0.034	0.026	0.127	0.021	0.031	0.045	0.043	0.020	0.051	0.030	0.034	0.018	0.035	0.044
394	0.019	0.037	0.016	0.020	0.024	0.060	0.016	0.009	0.015	0.015	0.015	0.033	0.043	0.035	0.035	0.025	0.027	0.042	0.013	0.036	0.025	0.057
398	0.032	0.015	0.000	0.020	0.024	0.030	0.027	0.013	0.037	0.015	0.015	0.045	0.043	0.032	0.019	0.045	0.043	0.024	0.047	0.032	0.025	0.015
402	0.021	0.037	0.024	0.028	0.021	0.037	0.027	0.022	0.007	0.023	0.020	0.037	0.049	0.032	0.021	0.050	0.027	0.036	0.034	0.027	0.030	0.072
406	0.021	0.000	0.032	0.028	0.038	0.022	0.022	0.026	0.020	0.028	0.010	0.021	0.006	0.038	0.021	0.035	0.022	0.024	0.021	0.023	0.020	0.026
410	0.011	0.030	0.016	0.008	0.028	0.015	0.027	0.031	0.025	0.013	0.020	0.045	0.019	0.019	0.037	0.040	0.024	0.006	0.030	0.014	0.010	0.021
414	0.034	0.022	0.016	0.028	0.010	0.067	0.038	0.031	0.020	0.034	0.005	0.017	0.012	0.013	0.027	0.030	0.018	0.024	0.034	0.023	0.025	0.041
418	0.040	0.030	0.032	0.024	0.035	0.037	0.032	0.044	0.037	0.028	0.010	0.012	0.037	0.013	0.027	0.010	0.022	0.018	0.030	0.018	0.030	0.044
422	0.016	0.030	0.016	0.060	0.035	0.015	0.005	0.035	0.027	0.028	0.010	0.025	0.031	0.006	0.035	0.005	0.027	0.042	0.034	0.027	0.010	0.044
426	0.019	0.000	0.032	0.024	0.038	0.030	0.038	0.013	0.022	0.008	0.010	0.012	0.043	0.019	0.013	0.030	0.033	0.012	0.030	0.023	0.030	0.039
430	0.019	0.007	0.065	0.024	0.021	0.045	0.059	0.013	0.029	0.036	0.025	0.021	0.019	0.038	0.024	0.025	0.022	0.030	0.038	0.023	0.020	0.018
434	0.024	0.007	0.008	0.036	0.010	0.022	0.027	0.009	0.010	0.039	0.015	0.050	0.025	0.016	0.013	0.020	0.035	0.024	0.038	0.009	0.045	0.003
438	0.013	0.037	0.024	0.036	0.017	0.052	0.011	0.013	0.017	0.028	0.029	0.012	0.019	0.013	0.021	0.035	0.024	0.012	0.025	0.014	0.035	0.005
442	0.008	0.015	0.000	0.016	0.014	0.000	0.011	0.013	0.022	0.005	0.000	0.012	0.012	0.006	0.016	0.010	0.014	0.012	0.008	0.018	0.010	0.003
446	0.016	0.030	0.024	0.016	0.000	0.000	0.027	0.026	0.015	0.010	0.000	0.004	0.019	0.003	0.008	0.030	0.014	0.042	0.004	0.018	0.000	0.003
450	0.003	0.015	0.032	0.016	0.014	0.015	0.011	0.018	0.007	0.013	0.005	0.017	0.012	0.010	0.013	0.015	0.012	0.012	0.013	0.018	0.045	0.000

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Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
454	0.024	0.015	0.024	0.012	0.028	0.000	0.016	0.009	0.015	0.005	0.010	0.017	0.006	0.016	0.011	0.015	0.014	0.012	0.013	0.000	0.015	0.000
458	0.021	0.030	0.024	0.012	0.007	0.022	0.022	0.004	0.032	0.013	0.020	0.012	0.031	0.029	0.021	0.020	0.012	0.006	0.017	0.036	0.010	0.005
462	0.019	0.000	0.000	0.016	0.021	0.007	0.016	0.004	0.020	0.010	0.000	0.008	0.012	0.010	0.019	0.005	0.010	0.012	0.013	0.032	0.020	0.013
466	0.008	0.000	0.024	0.000	0.003	0.015	0.027	0.018	0.010	0.018	0.005	0.008	0.012	0.000	0.005	0.005	0.010	0.006	0.004	0.009	0.025	0.010
470	0.011	0.007	0.000	0.008	0.007	0.000	0.005	0.009	0.002	0.010	0.010	0.000	0.006	0.000	0.008	0.005	0.006	0.012	0.013	0.005	0.020	0.005
474	0.003	0.000	0.008	0.004	0.007	0.007	0.016	0.009	0.005	0.000	0.010	0.008	0.019	0.000	0.008	0.010	0.002	0.024	0.013	0.005	0.010	0.010
478	0.019	0.000	0.008	0.012	0.003	0.000	0.011	0.004	0.010	0.003	0.005	0.008	0.006	0.016	0.005	0.005	0.010	0.006	0.004	0.005	0.005	0.005
482	0.003	0.000	0.000	0.004	0.000	0.015	0.005	0.013	0.002	0.003	0.005	0.004	0.012	0.006	0.000	0.005	0.006	0.012	0.013	0.009	0.005	0.003
486	0.000	0.007	0.000	0.004	0.000	0.000	0.005	0.000	0.002	0.008	0.000	0.004	0.000	0.003	0.008	0.005	0.008	0.018	0.000	0.005	0.000	0.000
490	0.000	0.000	0.008	0.008	0.003	0.000	0.000	0.004	0.002	0.008	0.005	0.000	0.000	0.006	0.000	0.000	0.002	0.000	0.008	0.009	0.000	0.005
494	0.003	0.000	0.000	0.000	0.007	0.000	0.011	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.005	0.005	0.002	0.006	0.000	0.009	0.000	0.000
498	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.002	0.006	0.004	0.000	0.000	0.008
502	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015
506	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.003
510	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.003
514	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000
Locus: *Ssa419*																						
n	164	75	65	125	142	66	99	115	203	166	109	125	81	160	187	102	263	84	116	116	98	193
266	0.003	0.000	0.008	0.004	0.000	0.000	0.000	0.000	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.010	0.002	0.018	0.000	0.004	0.000	0.000
270	0.006	0.013	0.015	0.004	0.011	0.008	0.020	0.004	0.015	0.024	0.032	0.008	0.012	0.000	0.003	0.005	0.011	0.030	0.004	0.009	0.010	0.000
274	0.003	0.000	0.008	0.004	0.007	0.000	0.005	0.004	0.002	0.000	0.000	0.004	0.012	0.013	0.005	0.000	0.004	0.000	0.000	0.000	0.005	0.000
278	0.003	0.000	0.008	0.004	0.018	0.000	0.000	0.004	0.002	0.000	0.000	0.004	0.000	0.006	0.003	0.000	0.004	0.000	0.000	0.004	0.005	0.003
282	0.006	0.020	0.000	0.012	0.004	0.000	0.005	0.004	0.007	0.000	0.000	0.000	0.012	0.003	0.003	0.000	0.000	0.018	0.009	0.004	0.000	0.016
286	0.009	0.013	0.008	0.004	0.007	0.008	0.010	0.000	0.012	0.003	0.000	0.000	0.012	0.013	0.003	0.000	0.010	0.000	0.000	0.009	0.005	0.013
290	0.024	0.027	0.031	0.012	0.021	0.015	0.020	0.035	0.020	0.012	0.055	0.044	0.043	0.028	0.021	0.015	0.032	0.006	0.026	0.022	0.026	0.008
294	0.024	0.000	0.038	0.036	0.011	0.008	0.005	0.013	0.025	0.027	0.009	0.024	0.043	0.034	0.040	0.020	0.019	0.018	0.026	0.030	0.020	0.021

-continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
298	0.034	0.007	0.000	0.032	0.018	0.008	0.035	0.013	0.017	0.030	0.023	0.028	0.019	0.025	0.032	0.029	0.023	0.018	0.022	0.022	0.026	0.026
302	0.024	0.013	0.008	0.024	0.018	0.008	0.025	0.026	0.025	0.018	0.041	0.012	0.025	0.025	0.037	0.025	0.030	0.030	0.026	0.017	0.015	0.047
306	0.018	0.020	0.023	0.032	0.032	0.076	0.025	0.030	0.032	0.030	0.096	0.032	0.043	0.050	0.040	0.025	0.029	0.036	0.026	0.017	0.015	0.041
310	0.040	0.033	0.023	0.032	0.053	0.061	0.040	0.057	0.047	0.078	0.037	0.068	0.086	0.034	0.080	0.069	0.042	0.042	0.047	0.047	0.066	0.028
314	0.067	0.027	0.092	0.052	0.042	0.053	0.020	0.043	0.047	0.054	0.055	0.048	0.019	0.059	0.037	0.049	0.040	0.036	0.030	0.073	0.041	0.052
318	0.046	0.027	0.023	0.040	0.035	0.076	0.045	0.061	0.059	0.057	0.023	0.032	0.043	0.034	0.032	0.049	0.027	0.030	0.052	0.022	0.031	0.016
322	0.040	0.047	0.038	0.064	0.074	0.038	0.030	0.052	0.049	0.069	0.078	0.028	0.025	0.031	0.029	0.034	0.040	0.048	0.047	0.078	0.041	0.031
326	0.037	0.067	0.062	0.032	0.035	0.038	0.051	0.048	0.062	0.018	0.037	0.036	0.012	0.034	0.040	0.054	0.044	0.024	0.056	0.043	0.051	0.028
330	0.043	0.040	0.069	0.024	0.070	0.053	0.056	0.017	0.064	0.060	0.041	0.040	0.043	0.037	0.051	0.044	0.049	0.036	0.052	0.052	0.041	0.047
334	0.058	0.073	0.031	0.032	0.028	0.061	0.051	0.039	0.052	0.048	0.064	0.032	0.049	0.034	0.061	0.025	0.067	0.048	0.039	0.056	0.071	0.023
338	0.018	0.020	0.038	0.048	0.004	0.038	0.051	0.035	0.027	0.033	0.018	0.012	0.012	0.028	0.021	0.044	0.040	0.030	0.022	0.034	0.046	0.067
342	0.037	0.053	0.054	0.020	0.032	0.045	0.015	0.022	0.032	0.036	0.018	0.048	0.025	0.044	0.045	0.054	0.023	0.036	0.030	0.034	0.026	0.036
346	0.030	0.027	0.031	0.056	0.039	0.030	0.035	0.026	0.047	0.051	0.005	0.040	0.012	0.025	0.019	0.029	0.030	0.036	0.026	0.022	0.036	0.028
350	0.024	0.020	0.023	0.020	0.021	0.015	0.030	0.022	0.022	0.009	0.032	0.028	0.049	0.034	0.035	0.049	0.042	0.018	0.056	0.022	0.036	0.031
354	0.021	0.033	0.038	0.060	0.035	0.030	0.030	0.022	0.037	0.048	0.018	0.028	0.031	0.019	0.040	0.034	0.025	0.018	0.030	0.034	0.031	0.018
358	0.046	0.053	0.023	0.028	0.039	0.023	0.035	0.043	0.010	0.036	0.028	0.036	0.019	0.022	0.024	0.025	0.025	0.060	0.034	0.022	0.036	0.005
362	0.021	0.007	0.023	0.024	0.018	0.023	0.020	0.026	0.017	0.024	0.009	0.032	0.031	0.031	0.024	0.039	0.042	0.012	0.026	0.017	0.020	0.023
366	0.030	0.073	0.015	0.024	0.035	0.008	0.045	0.009	0.022	0.018	0.014	0.020	0.031	0.013	0.035	0.039	0.032	0.065	0.034	0.022	0.026	0.026
370	0.015	0.013	0.023	0.036	0.049	0.023	0.030	0.039	0.027	0.030	0.046	0.016	0.068	0.047	0.027	0.039	0.044	0.036	0.026	0.052	0.036	0.023
374	0.024	0.027	0.023	0.040	0.011	0.008	0.025	0.035	0.007	0.000	0.023	0.028	0.006	0.016	0.013	0.029	0.023	0.030	0.017	0.017	0.020	0.036
376	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
378	0.027	0.013	0.054	0.016	0.007	0.015	0.051	0.013	0.017	0.009	0.060	0.016	0.019	0.031	0.029	0.029	0.015	0.024	0.009	0.017	0.020	0.013
380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
382	0.024	0.027	0.000	0.008	0.021	0.008	0.015	0.026	0.015	0.012	0.037	0.020	0.025	0.037	0.016	0.015	0.011	0.018	0.034	0.017	0.000	0.023
386	0.027	0.020	0.023	0.036	0.025	0.015	0.040	0.039	0.020	0.039	0.018	0.036	0.019	0.025	0.011	0.020	0.023	0.006	0.013	0.017	0.015	0.041
390	0.009	0.020	0.008	0.016	0.049	0.008	0.005	0.013	0.010	0.009	0.005	0.004	0.025	0.006	0.011	0.010	0.017	0.000	0.009	0.013	0.010	0.034
394	0.003	0.020	0.023	0.004	0.021	0.023	0.015	0.009	0.020	0.006	0.009	0.024	0.012	0.006	0.011	0.005	0.015	0.030	0.013	0.004	0.036	0.016

683 -continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
398	0.012	0.013	0.031	0.004	0.007	0.015	0.000	0.022	0.007	0.003	0.009	0.012	0.019	0.009	0.013	0.005	0.008	0.006	0.017	0.009	0.020	0.005
402	0.003	0.000	0.008	0.020	0.004	0.000	0.000	0.009	0.007	0.009	0.000	0.012	0.000	0.016	0.011	0.000	0.010	0.006	0.009	0.000	0.015	0.008
406	0.012	0.007	0.008	0.004	0.021	0.023	0.000	0.009	0.002	0.012	0.000	0.016	0.000	0.003	0.003	0.010	0.006	0.006	0.013	0.017	0.010	0.005
410	0.012	0.007	0.008	0.008	0.007	0.023	0.010	0.000	0.005	0.006	0.005	0.008	0.012	0.009	0.008	0.005	0.021	0.000	0.013	0.009	0.010	0.008
414	0.012	0.007	0.008	0.012	0.007	0.015	0.005	0.004	0.012	0.009	0.005	0.008	0.000	0.016	0.005	0.015	0.004	0.012	0.013	0.009	0.000	0.003
418	0.009	0.013	0.008	0.000	0.004	0.000	0.010	0.000	0.007	0.006	0.018	0.012	0.000	0.016	0.008	0.010	0.010	0.012	0.000	0.009	0.010	0.028
422	0.003	0.040	0.000	0.004	0.007	0.000	0.010	0.000	0.000	0.015	0.000	0.004	0.000	0.003	0.000	0.000	0.006	0.018	0.000	0.004	0.010	0.018
426	0.015	0.020	0.008	0.012	0.000	0.008	0.000	0.026	0.000	0.000	0.000	0.012	0.006	0.003	0.013	0.010	0.004	0.012	0.009	0.000	0.010	0.005
430	0.009	0.000	0.015	0.008	0.007	0.030	0.015	0.000	0.015	0.012	0.000	0.008	0.019	0.003	0.003	0.005	0.004	0.000	0.009	0.009	0.000	0.013
434	0.015	0.000	0.000	0.000	0.000	0.008	0.005	0.013	0.007	0.006	0.005	0.004	0.006	0.003	0.005	0.000	0.004	0.018	0.013	0.004	0.005	0.008
438	0.000	0.000	0.008	0.008	0.004	0.015	0.005	0.009	0.010	0.003	0.000	0.008	0.012	0.006	0.000	0.005	0.004	0.006	0.000	0.000	0.005	0.005
442	0.006	0.000	0.008	0.004	0.007	0.000	0.005	0.000	0.007	0.018	0.000	0.004	0.000	0.006	0.005	0.000	0.004	0.000	0.009	0.013	0.000	0.003
446	0.015	0.007	0.000	0.004	0.007	0.008	0.005	0.026	0.017	0.000	0.000	0.020	0.000	0.006	0.008	0.000	0.000	0.000	0.000	0.009	0.010	0.005
450	0.012	0.000	0.000	0.008	0.011	0.008	0.010	0.009	0.002	0.000	0.000	0.004	0.006	0.006	0.003	0.000	0.006	0.012	0.009	0.004	0.005	0.013
454	0.003	0.007	0.000	0.000	0.007	0.015	0.005	0.004	0.002	0.000	0.005	0.008	0.006	0.003	0.008	0.000	0.004	0.006	0.000	0.000	0.005	0.008
458	0.003	0.000	0.000	0.008	0.000	0.000	0.005	0.004	0.005	0.000	0.000	0.004	0.000	0.000	0.003	0.005	0.004	0.000	0.000	0.004	0.005	0.016
462	0.003	0.007	0.000	0.004	0.004	0.000	0.000	0.004	0.002	0.000	0.009	0.008	0.000	0.006	0.005	0.000	0.006	0.012	0.009	0.009	0.005	0.000
466	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.002	0.000	0.014	0.000	0.000	0.000	0.003	0.005	0.000	0.006	0.004	0.004	0.000	0.000
470	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.006	0.000	0.000	0.004	0.006	0.009	0.004	0.000	0.000
474	0.000	0.000	0.000	0.004	0.000	0.015	0.005	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.005	0.004	0.000	0.004	0.004	0.005	0.010
478	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.004	0.009	0.005	0.008
482	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.007	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
486	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.005
490	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
494	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.004	0.009	0.000	0.000
498	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.010	0.000	0.000	0.004	0.000	0.000	0.000
502	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

685 -continued-

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
506	0.000	0.013	0.000	0.004	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
510	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
514	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
518	0.000	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
522	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
526	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000
530	0.003	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
534	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
538	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
542	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.004	0.000	0.000
546	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.013	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.004	0.000	0.000
558	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
562	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
568	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
592	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
608	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000