**Supplemental Materials**

Supplemental Figure 1.A southward aerial view of Mocha Island, with the main cultural and natural features mentioned in the text.

Supplemental Figure 2. Westward view of the mounds. Part of the ancient landslide is on the left edge.

Supplemental Figure 3. Transversal major axis section of auger cores from research area NW-SE, showing the paleosurface and auger core depth. Vertical and horizontal axes are not at the same scale.

Supplemental Figure 4. Horizontal section of mound trench. Mound Base profile (MB) at the left, and Mound Top profile (MP) at the right.

Supplemental Figure 5. Profiles showing the parent material for the two main soil types present on Mocha Island: (a) *Typic Udipsamment* soil developed in a parent material of Calcareous sand; (b) *Dystric Haplustept* soil developed in a parent material of Tertiary rocks corresponding to the Tubul and Ranquil formations.

Supplemental Figure 6. Micromorphological features of: (a) Mound Top Profile (MP) Bt1 horizon (130cm), showing the jumbled nature of the soil aggregates in the fill: an unweathered silt aggregate (S) residing next to an iron oxide nodule fragment (Fe) and a silt aggregate with iron oxide quasicoating (upper right); (b) sharp boundary contact between the fill material (horizon 2C) and paleosol (horizon 3Ab).

Supplemental Text 1.

**Soils Pits Horizon (Stratum) Description**

(For Nomenclature used see Supplemental Text 2)

Profile: Mound top profile (MP)

Soil Taxonomy Classification: Typic Haplanthrept over Typic Udipsamment (Paleosol)

Ap (0-7cm). Silty Loamy, very dark brown (10 YR 2/2). Lighlty plastic and adhesive.

Bw1 (7-31cm). Silty Loamy, dark brown (10YR 3/3). Lighlty plastic and adhesive. 40% fragments of very dark grey (7.5Y 3/1) sandstone.

Bw2 (31-80cm). Silty sandy loam, brown (10YR 4/3). Lighlty plastic and adhesive. Weak clay coatings on clods. 40% fragments of very dark grey (7.5Y 3/1) sandstone.

Bt1 (80-225cm). Silty loamy sand, brown (10YR 4/3). 70% fragments of very dark grey (7.5Y 3/1) sandstone.

Bt2 (225-360cm). Texture, color and clasts fragments identical as above. Presence of cutans in clast faces.

Bt3 (360-400cm). Texture, color and clasts fragments identical as above. WithPresence of intensive weathering features like coatings of Fe oxides and nodules. Presence of clay coatings in clast borders and pores.

2BC (400-437cm). Mix of very dark grey (7.5Y 3/1) sandstone and dark yellowish brown (10YR 4/4) siltstone with Fe oxides and Mn oxides in a brown (10YR 4/3) matrix.

2C (437-474 cm). Similar origin and proportion of materials but with a lower level of weathering. Rock fragments with casts of fossils of *Epitoniidae*, which have been described for the Tubul Formation (Nielsen and Valdovinos, 2008).

3Ab (474-485cm). Very dark (7.5 YR 1.7/1) silt loam. Presence of fine sandstone fragments. Two bones, charcoal and ceramic fragments at the top. Charcoal fragments used for 14C datation.

3C1 (485-491cm). Very pale brown (10YR 8/4) coarse sand of shell fragments with few gravel fragments. Low reaction to HCl.

3C2 (491-496cm). Very pale brown (10YR 8/4) coarse sand of shell fragments with fragments of very dark brown (10YR 2/3) sand. Moderate reaction to HCl.

3C3 (496- 504 cm). Very pale brown (10YR 8/4) sand. Moderate reaction to HCl.

Profile: CQ

Soil Taxonomy Classification: Typic Udipsamment

Ap (0-7cm). Very dark greyish brown (10YR 3/2) sandy loam.

A2 (7-13 cm). Black (10YR 1.7/1) loamy sand with about 10% of fragmented shells.

Bw1 (13-24 cm). Very dark brown (10YR 2/2) sand with 50% of gravel size shell fragments.

Bw2 (24-37 cm). Very pale brown (10YR 7/4) loamy sand with 60% of gravel size shell fragments.

C (37-60cm). Very pale brown (10YR 8/4) sand made of shell fragments.

Profile: LP

Soil Taxonomy Classification: *Dystric Haplustept*

A1 (0-8cm) Dark brown (10YR 3/3) loam.

A2 (8-15cm). Dark grayish brown (10YR 4/2) loam.

Bw (15-30cm). Pale brown (10YR 6/3) and Brown (10YR 4/3) sandy loam.

Supplemental Text 2.

**Soil horizon terminology used (From Schoenberger et al. 2002)**

|  |  |
| --- | --- |
| Horizon nomenclature | |
| Horizon | Criteria |
| A | Mineral soil, formed normally at surface, with little remnant rock structure. |
| B | Mineral soil, typically formed below A, with little or no rock structure. |
| C | Mineral soil, little affected by pedogenesis and lack properties of A or B horizons. |
| Horizon suffixes | |
| Suffix | Criteria |
| b | Buried genetic horizon |
| p | Plow layer or other artificial disturbance |
| t | Illuvial accumulation of silicate clays. Clay that is transported from an upper soil horizon (layer) and deposited at a lower horizon. |
| w | Incipient color or pedogenic structure development; minimal illuvial accumulations. |
| Horizon prefixes | |
|  | Horizon prefixes indicate a lithological discontinuity, for instance a 2C horizon after a C horizon indicates a different provenance of the material or different events of deposition |

Supplemental Text 3.

**Micromorphological Soil Features**

Two horizons from the MP were selected for micromorphological analysis: Bt1 and 2C. Both horizons show a matrix of clay-forming microaggregates, with fine quartz and plagioclase grains in the matrix. There are fine, typically discontinuous clay coatings in some pores. Iron and clay coating fragments incorporated in the soil matrix are common, reflecting transport processes; soil aggregates corresponding to different components of the Tubul and Ranquil formations are also common (Supplemental Figure 6).

Supplemental Text 4.

**Mocha Island´s population estimate**

Mocha Island´s population estimate is an educated guess that emerges from examinations of different sources. On the one hand, from the ethnohistorical sources (Bibar 1966 [1558]; Carvallo Goyeneche 1875 [1796]; Garro 1686 (in Goicovich and Quiroz 2008); Goicovich 2010; Fletcher 1854 [1578]; Morales Melgarejo 1685 (in Goicovich and Quiroz 2008); Ovalle 1646; Rosales 1877 [1674]; Quiroga 1979 [1692]; Quiroz 1994; Tribaldos de Toledo 1864 [1625]; and compiled in Campbell 2011:45-48, 298-354) one can calculate population estimates that range from as low as 588 up to 4,200 people. Nevertheless, most of these estimates converge at under 2,000 people, and are even more tightly concentrated at under 1,000. On the other hand, one adopt Dillehay’s (2007:304) proposition, which used ethnoarchaeological and archaeological evidence to propose “that 1/2 ha of settlement contains one house lot (Dillehay 2004) . If each house lot (ruca) contains approximately seven persons, as it does today, it follows that a family would include homesteads of 1/2 ha or less." Then, from the site size estimated for each of the island homesteads, based on surveys and test pits, one can calculate an island population of about 1,000 people. Finally, Dillehay (2007:311) also proposes that "that a chiefly patrilineage territory in late pre-Hispanic times was approximately 25 sq km […] and associated with an estimated population of 1,500 to 3,000 people". Mocha Island is 50 km2, although its inhabitable coastal strip is only 25km2; its population can then be calculated as between the two values presented above. The estimated figure of 1,500 people thus emerges, based our attempts to account for the population figures from these various sources.

Supplemental Table 1.

**Absolute dates from Mocha Island archaeological sites**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Site | Laboratory code | Materialb, c | 14C Age B.P. | Cal Age  B.C./A.D.  Range (2σ) | Cal Age B.P.  Range (2σ) | p | Median Probabilityd | | Δ13C | Reference(s) |
| Cal B.C./  A.D | Cal B.P. |
| Mounds Complex | KCCAMS 109404 | Charcoal | 135 ± 15 | 1698 - 1724 | 226 - 252 | .162 | 1861 | 89 | -25.0 | Campbell and Quiroz 2015 |
|  |  |  |  | 1808 - 1869 | 81 - 142 | .366 |  |  |  |  |
|  |  |  |  | 1876 - 1952 | 0 - 74 | .472 |  |  |  |  |
|  | AA 89415 | Charcoal | 1096 ± 37 | 890 - 1043 | 907 - 1060 | 1 | 994 | 956 | -25.4 | Campbell 2011 |
| P5-1 | AA 109585 | Homo sapiens | 506 ± 25 | 1416 - 1456 | 494 - 534 | 1 | 1438 | 512 | -14.7 | This study |
|  | UB 26214 | Zea mays | 552 ± 26 | 1400 - 1443 | 507 - 550 | 1 | 1420 | 530 | -10.0 | This study |
|  | UB 26216 | Camelidae sp. | 605 ± 26 | 1319 - 1351 | 599 - 631 | .316 | 1396 | 554 | -21.2 | This study |
|  |  |  |  | 1385 - 1426 | 524 - 565 | .684 |  |  |  |  |
|  | AA 108920 | Camelidae sp. | 611 ± 23 | 1319 - 1351 | 599 - 631 | .379 | 1393 | 557 | -20.7 | This study |
|  |  |  |  | 1385 - 1420 | 530 – 565 | .621 |  |  |  |  |
|  | UB 24529 | Camelidae sp. | 683 ± 26 | 1294 - 1391 | 559 - 656 | 1 | 1347 | 603 | -21.1 | This study |
|  | UB 24528 | Camelidae sp. | 668 ± 26 | 1299 - 1395 | 555 - 651 | 1 | 1345 | 605 | -20.9 | This study |
|  | UB 26215 | Zea mays | 635 ± 25 | 1309 - 1360 | 590 - 641 | .653 | 1343 | 607 | -10.2 | This study |
|  |  |  |  | 1378 - 1409 | 541 - 572 | .347 |  |  |  |  |
|  | UB 24524 | Chenopodium quinoa | 718 ± 22 | 1281 - 1319 | 631 - 669 | .537 | 1315 | 635 | -28.6 | This study |
|  |  |  |  | 1351 - 1385 | 565 - 599 | .463 |  |  |  |  |
|  | Beta 73674 | Charcoal | 740 ± 100 | 1152 - 1435 | 515 - 798 | 1 | 1300 |  | -28.7 | Sánchez 1997 |
|  | UB 26213 | Camelidae sp. | 751 ± 35 | 1229 - 1252 | 698 - 721 | .063 | 1292 | 658 | - | This study |
|  |  |  |  | 1260 - 1320 | 630 - 690 | .68 |  |  |  |  |
|  |  |  |  | 1350 - 1386 | 564 - 600 | .257 |  |  |  |  |
|  | UB 24525 | Zea mays | 796 ± 25 | 1225 - 1288 | 662 - 725 | 1 | 1262 | 688 | -9.0 | This study |
|  | UB 24523 | Chenopodium quinoa | 816 ± 27 | 1218 - 1282 | 668 - 732 | 1 | 1249 | 701 | -27.9 | This study |
|  | UB 24526 | Zea mays | 992 ± 30 | 1025 - 1157 | 793 - 925 | 1 | 1094 | 856 | -9.7 | This study |
|  | OxA 34844 | Homo sapiens | 1022 ± 30 | 1015 - 1151 | 799 - 935 | 1 | 1087 | 863 | -15.6 | This study |
|  | Beta 73675 | Charcoal | 1210 ± 110 | 651 - 1046 | 904 - 1299 | .981 | 866 | 1081 | -27.6 | Sánchez 1997 |
|  |  |  |  | 1088 - 1110 | 840 - 862 | .012 |  |  |  |  |
|  |  |  |  | 1118 - 1131 | 819 - 832 | .007 |  |  |  |  |
|  | UB 26212 | Pudu puda | 3566 ± 32 | -1952 - -1744 | 3693 - 3901 | 1 | -1841 | 3790 | -20.1 | This study |
|  | AA 108919 | Pudu puda | 3651 ± 29 | -2122 - -2093 | 4042 - 4071 | .042 | -1969 | 3918 | -20.5 | This study |
|  |  |  |  | -2042 - -1883 | 3832 - 3991 | .958 |  |  |  |  |
| P10-1 | AA 109584 | Homo sapiens | 1169 ± 26 | 885 - 987 | 963 - 1065 | 1 | 933 | 1017 | -14.7 | This study |
|  | UCTL 537 | Pottery | 1560 ± 150 | 130 - 730 |  |  | 430 |  |  | Sánchez 1997 |
| P12-1 | UB 29283 | Zea mays | 453 ± 28 | 1435 - 1503 | 447 - 515 | .904 | 1465 | 485 | -9.6 | This study |
|  |  |  |  | 1592 - 1614 | 336 - 358 | .096 |  |  |  |  |
|  | Beta 79917 | Charcoal | 550 ± 70 | 1298 - 1501 | 449 - 652 | .982 | 1417 | 533 | -28.4 | Campbell and Quiroz 2015 |
|  |  |  |  | 1595 - 1612 | 338 - 355 | .018 |  |  |  |  |
|  | UB 29284 | Zea mays | 656 ± 27 | 1300 - 1368 | 582 - 650 | .74 | 1343 | 607 | -9.8 | This study |
|  |  |  |  | 1372 - 1400 | 550 - 578 | .26 |  |  |  |  |
|  | Beta 79918 | Charcoal | 680 ± 80 | 1229 - 1250 | 700 - 721 | .03 | 1341 | 609 | -27.8 | Campbell and Quiroz 2015 |
|  |  |  |  | 1260 - 1434 | 516 - 690 | .97 |  |  |  |  |
|  | UB 29282 | Camelidae sp. | 744 ± 32 | 1234 - 1243 | 707 - 716 | .013 | 1296 | 654 | -19.8 | This study |
|  |  |  |  | 1265 - 1321 | 629 - 685 | .68 |  |  |  |  |
|  |  |  |  | 1348 - 1387 | 563 - 602 | .307 |  |  |  |  |
|  | UB 29286 | Camelidae sp. | 753 ± 27 | 1234 - 1243 | 707 - 716 | .016 | 1288 | 662 | -20.3 | This study |
|  |  |  |  | 1265 - 1316 | 634 - 685 | .789 |  |  |  |  |
|  |  |  |  | 1355 - 1382 | 568 - 595 | .194 |  |  |  |  |
|  | UB 29285 | Spheniscus sp. | 4064 ± 45 | -2083 - -2080 | 4029 - 4032 | .001 | -1891 | 3840 | -12.7 | This study |
|  |  |  |  | -2072 - -1714 | 3663 - 4021 | .999 |  |  |  |  |
| P21-1 | Beta 162420 | Charcoal | 310 ± 60 | 1459 - 1681 | 269 - 491 | .853 | 1599 | 351 | -26.1 | Quiroz and Sánchez 2005; Campbell and Quiroz 2015 |
|  |  |  |  | 1730 - 1802 | 148 - 220 | .147 |  |  |  |  |
|  | Beta 75240 | Charcoal | 420 ± 80 | 1410 - 1655 | 295 - 540 | 1 | 1532 | 418 | -27.8 | Sánchez 1997 |
|  | AA 109586 | Homo sapiens | 563 ± 25 | 1397 - 1440 | 510 - 553 | 1 | 1416 | 534 | -15.7 | This study |
|  | Beta 75239 | Charcoal | 640 ± 50 | 1293 - 1420 | 530 - 657 | 1 | 1350 | 600 | -26.9 | Quiroz and Sánchez 2005; Campbell and Quiroz 2015 |
|  | UCTL 529 | Pottery | 750 ± 80 | 1080 - 1400 |  |  | 1240 |  |  | Sánchez 1997 |
|  | UCTL 528 | Pottery | 770 ± 80 | 1060 - 1380 |  |  | 1220 |  |  | Sánchez 1997 |
|  | Beta 162421 | Charcoal | 870 ± 60 | 1045 - 1091 | 859 - 905 | .087 | 1207 | 744 | -26.2 | Quiroz and Sánchez 2005; Campbell and Quiroz 2015 |
|  |  |  |  | 1107 - 1122 | 828 - 843 | .016 |  |  |  |  |
|  |  |  |  | 1128 - 1288 | 662 - 822 | .897 |  |  |  |  |
|  | Beta 181243 | Charcoal | 900 ± 60 | 1044 - 1273 | 677 - 906 | 1 | 1179 | 771 | -26.5 | Quiroz and Sánchez 2005; Campbell and Quiroz 2015 |
|  | Beta 69935 | Charcoal | 910 ± 70 | 1032 - 1272 | 678 - 918 | 1 | 1166 | 784 | -25.0 | Sánchez 1997 |
|  | UCTL 530 | Pottery | 1010 ± 100 | 780 - 1180 |  |  | 980 |  |  | Sánchez 1997 |
|  | UCTL 539 | Pottery | 1020 ± 100 | 770 - 1170 |  |  | 970 |  |  | Sánchez 1997 |
|  | UCTL 540 | Pottery | 1030 ± 110 | 740 - 1180 |  |  | 960 |  |  | Sánchez 1997 |
|  | UCTL 541 | Pottery | 1060 ± 100 | 730 - 1130 |  |  | 930 |  |  | Sánchez 1997 |
|  | UCTL 531 | Pottery | 1790 ± 180 | -160 - 560 |  |  | 200 |  |  | Campbell and Quiroz 2015 |
| P22-1 | AA 108923 | Otariidae sp. | 1033 ± 24 | 1405 - 1583 | 367 - 545 | 1 | 1477 | 473 | -11.6 | This study |
|  | AA 108922 | Camelidae sp. | 453 ± 23 | 1440 - 1499 | 451 - 510 | .955 | 1461 | 489 | -21.7 | This study |
|  |  |  |  | 1598 - 1610 | 340 - 352 | .045 |  |  |  |  |
|  | UB 29292 | Charcoal | 520 ± 33 | 1405 - 1456 | 494 - 545 | 1 | 1432 | 518 | -26.9 | This study |
|  | AA 108924 | Camelidae sp. | 572 ± 23 | 1395 – 1437 | 513 - 555 | 1 | 1412 | 538 | -21.3 | This study |
|  | AA 108921 | Camelidae sp. | 709 ± 23 | 1284 - 1322 | 628 - 666 | .485 | 1346 | 604 | -18.3 | This study |
|  |  |  |  | 1347 - 1387 | 563 - 603 | .515 |  |  |  |  |
|  | UB 29293 | Charcoal | 707 ± 30 | 1281 - 1327 | 623 - 669 | .474 | 1342 | 608 | -27.8 | This study |
|  |  |  |  | 1340 - 1390 | 560 - 610 | .526 |  |  |  |  |
|  | Beta 71646 | Charcoal | 1200 ± 140 | 640 - 1162 | 788 - 1310 | .998 | 879 | 1069 | -25.0 | Sánchez 1997 |
|  |  |  |  | 1170 - 1174 | 776 - 780 | .002 |  |  |  |  |
|  | AA 108925 | Pudu puda | 1220 ± 24 | 772 - 900 | 1050 - 1178 | .834 | 864 | 1086 | -21.3 | This study |
|  |  |  |  | 927 - 964 | 986 - 1023 | .166 |  |  |  |  |
|  | UCTL 542 | Pottery | 1210 ± 130 | 520 - 1040 |  |  | 780 |  |  | Sánchez 1997 |
|  | UCTL 543 | Pottery | 1250 ± 100 | 540 - 940 |  |  | 740 |  |  | Sánchez 1997 |
| P23-2 | AA 108927 | Pudu puda | 243 ± 23 | 1648 - 1677 | 273 - 302 | .315 | 1751 | 199 | -21.2 | This study |
|  |  |  |  | 1734 - 1799 | 151- 216 | .685 |  |  |  |  |
|  | AA 108926 | Camelidae sp. | 400 ± 23 | 1455 – 1515 | 435 - 495 | .501 | 1526 | 424 | -21.2 | This study |
|  |  |  |  | 1541 – 1625 | 325 - 409 | .499 |  |  |  |  |
|  | AA 108929 | Camelidae sp. | 700 ± 23 | 1286 - 1325 | 625 - 664 | .445 | 1350 | 600 | -19.1 | This study |
|  |  |  |  | 1343 - 1390 | 560 - 607 | .555 |  |  |  |  |
|  | UB 29289 | Phaseolus vulgaris | 679 ± 25 | 1297 - 1391 | 559 - 653 | 1 | 1347 | 603 | -24.4 | This study |
|  | AA 108928 | Camelidae sp. | 740 ± 23 | 1274 - 1315 | 635 – 676 | .722 | 1295 | 655 | -21.4 | This study |
|  |  |  |  | 1356 - 1381 | 569 - 594 | .278 |  |  |  |  |
|  | UB 29290 | Zea mays | 1108 ± 28 | 896 - 933 | 1017 - 1054 | .194 | 989 | 961 | -9.2 | This study |
|  |  |  |  | 959 - 1026 | 924 - 991 | .806 |  |  |  |  |
| P25-1 | Gd 9198 | Charcoal | 240 ± 170 | 1460 - 1950 | 0 - 490 | 1 | 1707 | 241 | -25.0 | Campbell and Quiroz 2015 |
|  | Beta 137969 | Shell | 810 ± 60 | 1156 - 1317 | 633 - 794 | .94 | 1691 | 259 | 1.8 | Campbell and Quiroz 2015 |
|  |  |  |  | 1354 - 1383 | 567 - 596 | .06 |  |  |  |  |
|  | Gd 10008 | Charcoal | 270 ± 100 | 1478 - 1819 | 131 - 472 | .814 | 1685 | 263 | -25.0 | Sánchez 1997 |
|  |  |  |  | 1825 - 1896 | 54 - 125 | .115 |  |  |  |  |
|  |  |  |  | 1904 - 1950 | 0 - 46 | .071 |  |  |  |  |
|  | AA 108931 | Camelidae sp. | 428 ± 23 | 1447 - 1507 | 443 - 503 | .794 | 1480 | 470 | -20.1 | This study |
|  |  |  |  | 1585 - 1619 | 331 - 365 | .206 |  |  |  |  |
|  | AA 109583 | Homo sapiens | 516 ± 24 | 1413 - 1452 | 498 - 537 | 1 | 1434 | 516 | -14.0 | This study |
|  | Beta 132088 | Charcoal | 620 ± 60 | 1294 - 1437 | 513 - 656 | 1 | 1362 | 588 | -26.9 | Sánchez et al. 2004; Campbell and Quiroz 2015 |
|  | AA 108934 | Camelidae sp. | 703 ± 23 | 1285 - 1324 | 626 - 665 | .459 | 1349 | 601 | -20.7 | This study |
|  |  |  |  | 1344 - 1389 | 561 - 606 | .541 |  |  |  |  |
|  | UB 29287 | Zea mays | 644 ± 35 | 1300 - 1369 | 581 - 650 | .684 | 1345 | 605 | -9.6 | This study |
|  |  |  |  | 1371 - 1407 | 543 - 579 | .316 |  |  |  |  |
|  | AA 108930 | Camelidae sp. | 687 ± 33 | 1290 - 1392 | 558 - 660 | 1 | 1345 | 605 | -21.4 | This study |
|  | UB 29288 | Zea mays | 661 ± 30 | 1299 - 1398 | 552 - 651 | 1 | 1344 | 606 | -10.2 | This study |
|  | Beta 132089 | Charcoal | 720 ± 80 | 1213 - 1418 | 532 - 737 | 1 | 1318 | 632 | -26.6 | Sánchez et al. 2004; Campbell and Quiroz 2015 |
|  | AA 108932 | Camelidae sp. | 758 ± 23 | 1235 - 1242 | 708 - 715 | .014 | 1285 | 665 | -21.1 | This study |
|  |  |  |  | 1265 - 1312 | 638 - 685 | .877 |  |  |  |  |
|  |  |  |  | 1359 - 1380 | 570 - 591 | .109 |  |  |  |  |
|  | Beta 137970 | Charcoal | 880 ± 70 | 1040 - 1285 | 665 - 910 | 1 | 1193 | 757 | -24.6 | Sánchez et al. 2004; Campbell and Quiroz 2015 |
|  | Beta 62819 / CAMS 14037 | Charcoal | 890 ± 70 | 1038 - 1280 | 670 - 912 | 1 | 1184 | 766 | -25.1 | Sánchez 1997 |
|  | Beta 114462 | Charcoal | 900 ± 80 | 1026 - 1283 | 667 - 924 | 1 | 1172 | 778 | -26.2 | Sánchez et al. 2004; Campbell and Quiroz 2015 |
|  | UCTL 538 | Pottery | 820 ± 100 | 970 - 1370 |  |  | 1170 |  |  | Sánchez 1997 |
|  | AA 108933 | Pudu puda | 944 ± 24 | 1045 – 1096 | 854 - 905 | .327 | 1149 | 801 | -22.8 | This study |
|  |  |  |  | 1106 – 1124 | 826 - 844 | .045 |  |  |  |  |
|  |  |  |  | 1126 – 1211 | 739 - 824 | .628 |  |  |  |  |
|  | AA 108936 | Pudu puda | 1053 ± 27 | 988 - 1048 | 902 - 962 | .765 | 1024 | 926 | -21.6 | This study |
|  |  |  |  | 1083 - 1140 | 810 - 867 | .235 |  |  |  |  |
|  | AA 108935 | Camelidae sp. | 1055 ± 25 | 989 – 1047 | 903 - 961 | .828 | 1021 | 929 | -20.4 | This study |
|  |  |  |  | 1085 – 1134 | 816 - 865 | .172 |  |  |  |  |
|  | UCTL 535 | Pottery | 1240 ± 130 | 490 – 1010 |  |  | 750 |  |  | Sánchez 1997 |
|  | UCTL 536 | Pottery | 1310 ± 130 | 420 - 940 |  |  | 680 |  |  | Sánchez 1997 |
|  | Gd 10007 | Charcoal | 1760 ± 130 | 27 - 599 | 1351 - 1923 | 1 | 314 | 1620 | -25.0 | Sánchez 1997 |
|  | Gd 9197 | Charcoal | 1940 ± 180 | -357 - -276 | 2225 - 2306 | .041 | 103 | 1827 | -25.0 | Sánchez 1997 |
|  |  |  |  | -259 - 502 | 1448 - 2208 | .954 |  |  |  |  |
|  |  |  |  | 506 - 520 | 1430 - 1444 | .006 |  |  |  |  |
| P27-1 | Beta 110337 | Shell | 3650 ± 70 | -1594 - -1184 | 3133 - 3543 | 1 | -1384 | 3338 | 1.3 | Quiroz et al. 2000b |
|  | Beta 71647 / CAMS 13062 | Charcoal | 3220 ± 50 | -1009 - -743 | 2692 - 2958 | 1 | -1453 | 3391 | -28.3 | Quiroz and Vásquez 1996 |
|  | Beta 110336 | Shell | 3740 ± 50 | -1659 - -1343 | 3292 - 3608 | 1 | -1493 | 3442 | 0.8 | Quiroz et al. 2000a |
| P29-1 | AA 108937 | Camelidae sp. | 654 ± 23 | 1301 - 1365 | 585 - 649 | .746 | 1342 |  | -20.7 | This study |
|  |  |  |  | 1375 - 1400 | 550 - 575 | .254 | 608 |  |  |  |
|  | AA 89418 | Charcoal | 759 ± 38 | 1226 - 1318 | 632 - 724 | .801 | 1286 | 663 | -25.6 | Campbell 2011 |
|  |  |  |  | 1353 - 1384 | 566 - 597 | .199 |  |  |  |  |
|  | AA 108938 | Camelidae sp. | 821 ± 24 | 1219 - 1279 | 671- 731 | 1 | 1247 | 703 | -20.6 | This study |
|  | AA 89417 | Charcoal | 825 ± 36 | 1190 - 1193 | 757 - 760 | .006 | 1245 | 705 | -25.0 | Campbell 2011 |
|  |  |  |  | 1197 - 1287 | 663 - 753 | .994 |  |  |  |  |
|  | AA 89416 | Charcoal | 895 ± 38 | 1049 - 1082 | 868 - 901 | .066 | 1192 | 758 | -26.4 | Campbell 2011 |
|  |  |  |  | 1142 - 1271 | 679 - 808 | .934 |  |  |  |  |
|  | AA 89419 | Charcoal | 964 ± 36 | 1029 - 1192 | 758 - 921 | .993 | 1108 | 840 | -26.6 | Campbell 2011 |
|  |  |  |  | 1198 - 1200 | 750 - 752 | .007 |  |  |  |  |
|  | AA 89420 | Charcoal | 1105 ± 36 | 893 - 942 | 1008 - 1057 | .239 | 988 | 960 | -24.1 | Campbell 2011 |
|  |  |  |  | 948 - 1029 | 921 - 1002 | .761 |  |  |  |  |
| P30-1 | Gd 4884 | Charcoal | 3270 ± 120 | -1262 - -611 | 2560 - 3211 | 1 | -1506 | 3443 | -25.0 | Quiroz and Sánchez 1993 |
|  | Beta 57810 / CAMS 5348 | Charcoal | 3280 ± 60 | -1106 - -777 | 2726 - 3055 | 1 | -1517 | 3450 | -25.0 | Quiroz and Sánchez 1993 |
|  | Gd 4885 | Charcoal | 3310 ± 90 | -1213 - -765 | 2714 - 3162 | 1 | -1553 | 3490 | -25.0 | Quiroz and Sánchez 1993 |
| P31-1 | AA 89423 | Charcoal | 334 ± 34 | 1496 - 1654 | 296 - 454 | 1 | 1563 | 387 | -24.0 | Campbell 2011 |
|  | AA 89421 | Charcoal | 408 ± 37 | 1451 - 1526 | 424 - 499 | .512 | 1525 | 425 | -26.0 | Campbell 2011 |
|  |  |  |  | 1534 - 1627 | 323 - 416 | .488 |  |  |  |  |
|  | Gd 7152 | Charcoal | 450 ± 50 | 1419 - 1521 | 429 - 531 | .682 | 1485 | 466 | -25.0 | Sánchez et al. 1994 |
|  |  |  |  | 1536 - 1626 | 324 - 414 | .318 |  |  |  |  |
|  | Beta 57811 | Charcoal | 500 ± 50 | 1394 - 1506 | 444 - 556 | .942 | 1443 | 507 | -25.0 | Sánchez et al. 1994 |
|  |  |  |  | 1586 - 1618 | 332 - 364 | .058 |  |  |  |  |
|  | Gd 7174 | Charcoal | 500 ± 40 | 1401 - 1496 | 454 - 549 | 1 | 1440 | 510 | -25.0 | Sánchez et al. 1994 |
|  | Beta 95085 | Charcoal | 510 ± 60 | 1321 - 1348 | 602 - 629 | .032 | 1440 | 510 | -25.8 | Sánchez et al. 2004; Campbell and Quiroz 2015 |
|  |  |  |  | 1387 - 1511 | 439 - 563 | .883 |  |  |  |  |
|  |  |  |  | 1550 - 1558 | 392 - 400 | .006 |  |  |  |  |
|  |  |  |  | 1574 - 1622 | 328 - 376 | .079 |  |  |  |  |
|  | AA 89422 | Charcoal | 519 ± 37 | 1399 - 1460 | 490 - 551 | 1 | 1432 | 518 | -24.0 | Campbell 2011 |
|  | Gd 6429 | Charcoal | 530 ± 80 | 1300 - 1368 | 582 - 650 | .15 | 1431 | 519 | -26.6 | Quiroz et al. 1993; Sánchez et al. 1994 |
|  |  |  |  | 1372 - 1513 | 437 - 578 | .736 |  |  |  |  |
|  |  |  |  | 1545 - 1624 | 326 - 405 | .114 |  |  |  |  |
|  | Gd 7144 | Charcoal | 530 ± 60 | 1316 - 1355 | 595 - 634 | .079 | 1428 | 522 | -25.0 | Sánchez et al. 1994 |
|  |  |  |  | 1382 - 1504 | 446 - 568 | .891 |  |  |  |  |
|  |  |  |  | 1590 - 1616 | 334 - 360 | .03 |  |  |  |  |
|  | Gd 5901 | Charcoal | 560 ± 40 | 1324 - 1343 | 607 - 626 | .058 | 1416 | 534 | -25.0 | Quiroz et al. 1993; Sánchez et al. 1994 |
|  |  |  |  | 1389 - 1451 | 499 - 561 | .942 |  |  |  |  |
|  | Gd 6431 | Charcoal | 640 ± 90 | 1230 - 1249 | 701 - 720 | .017 | 1354 | 596 | -25.0 | Quiroz et al. 1993; Sánchez et al. 1994 |
|  |  |  |  | 1261 - 1456 | 494 - 689 | .983 |  |  |  |  |
|  | AA 108939 | Camelidae sp. | 706 ± 23 | 1284 - 1323 | 627 - 666 | .468 | 1348 | 602 | -21.2 | This study |
|  |  |  |  | 1346 - 1388 | 562 - 604 | .532 |  |  |  |  |
|  | Beta 95086 | Charcoal | 700 ± 50 | 1276 - 1399 | 551 - 674 | 1 | 1338 | 612 | -25.3 | Sánchez et al. 2004; Campbell and Quiroz 2015 |
|  | Gd 5902 | Charcoal | 710 ± 50 | 1270 - 1399 | 551 - 680 | 1 | 1332 | 618 | -26.8 | Quiroz et al. 1993; Sánchez et al. 1994 |
|  | AA 89424 | Charcoal | 826 ± 27 | 1214 - 1280 | 670 - 736 | 1 | 1246 | 704 | -25.7 | Campbell 2011 |
|  | Gd 6428 | Charcoal | 840 ± 70 | 1046 - 1089 | 861 - 904 | .058 | 1227 | 723 | -24.2 | Quiroz et al. 1993; Sánchez et al. 1994 |
|  |  |  |  | 1109 - 1120 | 830 - 841 | .009 |  |  |  |  |
|  |  |  |  | 1130 - 1315 | 635 - 820 | .903 |  |  |  |  |
|  |  |  |  | 1356 - 1381 | 569 - 594 | .029 |  |  |  |  |
| Laguna Huairavosa | Beta 62523 | Charcoal | 1760 ± 80 | 127 - 189 | 1761 - 1823 | .079 | 316 | 1617 | - | Le-Quesne et al. 1999 |
|  |  |  |  | 192 - 520 | 1430 - 1758 | .921 |  |  |  |  |

*Note*: Dates were calibrated using the software Calib 7.0 (Stuiver et al. 2005) and the calibration curve SHCal13 (Hogg et al. 2013), unless indicated. Negative values on dates correspond to B.C. dates

a It is an environmental column, not an archaeological site.

b Dates on pottery are thermoluminescence dates; base year 1990.

c Dates on shell and *Spheniscus* sp. and *Otariidae* sp. were calibrated considering a marine reservoir effect value of 190 ± 40 (as indicated by Stuiver and Braziunas [1993] for the South American South Pacific), and using the calibration curve Marine13 (Reimer et al. 2013).

d After Telford et al. 2004.

Supplemental Table 2.

**Carpological remains recovered from the Mound top Profile (MP) trench**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Taxa | Level1  (474-479 cm) | Level 2  (479-484 cm) | Level 3  (484-489 cm) | Level 4  (489-494 cm) | Total |
| *Chenopodium* sp. (charred) | 2 |  |  |  | 2 |
| Poaceae (uncharred) |  |  | 1 |  | 1 |
| Poaceae (charred) |  |  |  | 3 | 3 |
| Unidentifiable (charred) |  |  | 2 | 4 | 6 |
| Total | 2 |  | 3 | 7 | 12 |