United States Department of Agriculture
Natural Resources Conservation Service

NEON Site Plot Summary
Jornada LTER (JORN)

Document Information

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Site Background

The Jornada LTER site in approximately 19.6 miles north northeast of Las Cruces, New Mexico. The site is in Major Land Resource Area (MLRA) 42 – Southern Desertic Basins, Plains, and Mountains.
This site consists of approximately 256,000 acres and is located within the Jornada del Muerto basin between the Rio Grande River and the San Andres Mountains, Dona Ana County, New Mexico

Site Information

Elevation ranges from 4,340 feet to 4,383 feet above sea level.

The parent materials at the Jornada LTER site are Pleistocene Rio Grande alluvium and localized Holocene age alluvium generally capped by Holocene age sandy eolian deposits.

Land use is strictly long term rangeland research

Plant communities are black grama grasslands and mesquite shrub/coppice duneland with various Sporobolus grass species

From the Dona Ana County Soil Survey, major soil series on the site include Harrisburg, Onite, Pajarito, Pintura, Simona, and Wink.

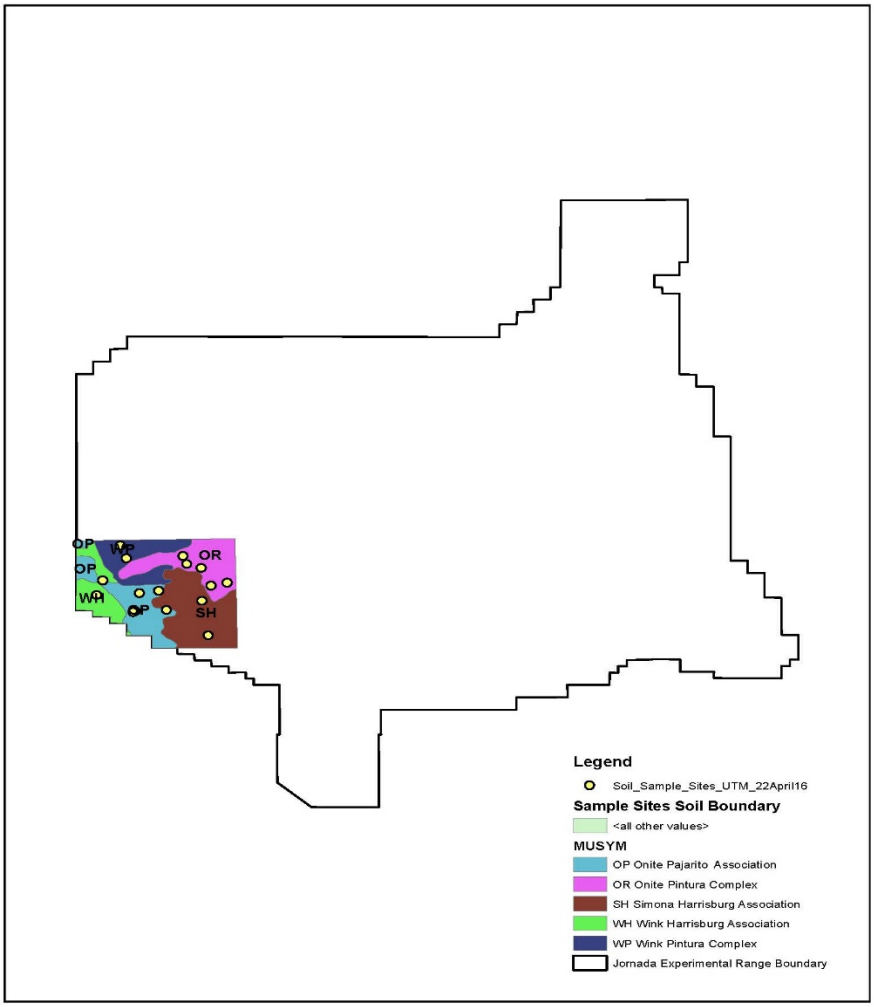
Landforms within the site are fan piedmonts and fan remnants.

Analysis of Plots for Sampling

Out of the original 34 potential sites, 16 sites were chosen for sampling. The original sites were within five soil map units. All five map units were represented by the 16 sample sites. Landform position, slope, elevation, vegetative community and satellite image tones we used to select the 16 sites. The Region 8 and Las Cruces Soil Survey offices were involved in site selection.

Jornada LTER NEON Boundary—The Jornada LTER site boundary shapefile provided by NEON covers the entire 256,000 acres of the Jornada LTER. To simplify the map units sampled versus map units not sampled table a new boundary was created within the Jornada LTER boundary that encompasses a more confined area where the 16 sample sites are located. Figure 1 illustrates the new NEON site boundary, or 'subsite' within the boundary of the entire LTER.

Figure 1. Plot locations within focused data collection area.



The subsite, with arbitrary boundaries on about two sides, consists of about 11,740 acres and comprises about 4.5 percent of the total site (256,000 acres). On the subsite, the following map units were sampled:

Map Unit Symbol	Map Unit Name	Map Unit Acres	Percent of Area	Map Unit Sample Points
OP	Onite-Pajarito association	2,288	19.49	5
OR	Onite-Pintura complex	2,563	21.83	5
SH	Simona-Harrisburg association	3,611	30.76	2
WH	Wink-Harrisburg association	1,450	12.35	2
WP	Wink-Pintura complex	1,828	15.57	2
		Total	**100%**	

The following table provides plot identification, sample plot map unit symbol and name, and the soil series name sampled within the map unit:

Plot ID	Map Unit Symbol	Map Unit Name	Soil Series Sampled	Named Map Unit Major or Minor Component
JORN_007	WH	Wink-Harrisburg association	Bucklebar	No
JORN_030	WH	Wink-Harrisburg association	Nations	No (Classifies the same as the MLRA 30 Harrisburg series)
JORN_018	WP	Wink-Pintura complex	Pajarito	Yes (minor)
JORN_010	WP	Wink-Pintura complex	Nations taxadjunct	No (Classifies similar as the MLRA 30 Harrisburg series)
JORN_006	OP	Onite-Pajarito association	Nations	No
JORN_005	SH	Simona-Harrisburg association	Atoka	No
JORN_042	WP	Wink-Pintura complex	Wink	Yes (major)
JORN_044	WP	Wink-Pintura complex	Simona	Yes (minor)

JORN_023	OR	Onite-Pintura complex	Berino	Yes (minor)
JORN_012	OR	Onite-Pintura complex	Wink	No
JORN_029	OR	Onite-Pintura complex	Calcic Petrocalcid	No
JORN_003	WP	Wink-Pintura complex	Nations	No
JORN_024	OP	Onite-Pajarito association	Nations	No
JORN_001	OR	Onite-Pintura complex	Typic Petrocalcids	No
JORN_011	OR	Onite-Pintura complex	Pajarito	Yes (minor)
JORN_016	SH	Simona-Harrisburg association	Simona	Yes (major)

Plot Findings

Pedon and plot (site) data were collected at all 16 plots. Pedon data included horizon designations, horizon depths, field texture including sand, silt, and clay estimates, color, effervescence, structure, consistence, horizon boundaries, concentrations, ped void surface features, and root and pores. Plot (site) data included parent material, geomorphic position, UTM and latitude and longitude coordinates, slope, drainage, runoff, annual air temperature and precipitation, flooding and ponding, and area and map unit overlap.

Summary of Soils

JORN_007 – This pedon is within the Wink-Harrisburg association map unit and classifies as the Bucklebar series, Fine-loamy, mixed, superactive, thermic Typic Haplargids. Bucklebar is not a named major or minor map unit component nor is it a similar soil to any of the named map unit components. This Bucklebar pedon has a very strong argillic horizon. The profile has a loamy sand/sandy loam eolian surface over the sandy clay loam argillic horizon and is non-effervescent throughout.

JORN_030 – This pedon is within the Wink-Harrisburg association map unit and classifies as the Nations series, Coarse-loamy, mixed, superactive, thermic Typic Petrocalcid. Nations is not a named major or minor map component although Nations and Harrisburg, a named map unit component, classify the same. The Harrisburg series is from MLRA 30 in Utah and will no longer be used in MLRA 42. An indurated petrocalcic horizon is at 58 centimeters. Up to 10 percent petrocalcic fragments are found above the petrocalcic horizon. This pedon effervesces throughout.

JORN_018 – This pedon is within the Wink-Pintura complex and classifies as the Pajarito series, Coarse-loamy, mixed, superactive, thermic Typic Haplocambid. Pajarito is a named minor

map unit component. Besides the weakly developed cambic horizon, this pedon has no other diagnostic features. This pedon effervesces throughout.

JORN_010 – This pedon is within the Wink-Pintura complex map unit and classifies as a Nations taxadjunct, Coarse-loamy, mixed, superactive, thermic, shallow Typic Petrocalcid. Nations is not a named major or minor map unit component although Nations and Harrisburg classify the same. The Harrisburg series is from MLRA 30 in Utah and will no longer be used in MLRA 42. This pedon is considered a taxadjunct due to an indurated petrocalcic horizon at 34 centimeters. The Nations series' petrocalcic horizon is between 50 and 100 centimeters. This pedon is non-effervescent.

JORN_006 – This pedon is within the Onite-Pajarito association map unit and classifies as the Nations series, Coarse-loamy, mixed, superactive, thermic Typic Petrocalcid. Nations is not a named major or minor map unit component. An indurated petrocalcic horizon is at 64 centimeters. This pedon is considered a taxadjunct due to a weak calcic horizon between 27 and 64 centimeters. Up to 3 percent petrocalcic fragments are found above the petrocalcic horizon. Except for the upper 4 centimeters, this pedon effervesces throughout.

JORN_005 – This pedon is within the Simona-Harrisburg association map unit and classifies as Atoka, Fine-loamy, mixed, superactive, thermic Typic Petrocalcid. Atoka is not a named major or minor map unit component. An indurated petrocalcic horizon is at 90 centimeters. This pedon only effervesces between 58 and 90 centimeters.

JORN_042 – This pedon is within the Wink-Pintura complex map unit and classifies as the Wink series, Coarse-loamy, mixed, superactive, thermic Typic Haplocalcid. Wink is a named major map unit component. This pedon was near the Tower site so an augur was used for excavating the sample. A weak calcic horizon is between 8 and 100 centimeters. Up to 18 percent petrocalcic fragments are found above the petrocalcic horizon. Except for the upper 8 centimeters, this pedon effervesces throughout.

JORN_044 – This pedon is within the Wink-Pintura complex map unit and classifies as the Simona series, Loamy, mixed, superactive, thermic, shallow Typic Petrocalcid. Simona is a named minor map unit component. This pedon was near the Tower site so an augur was used for excavating the sample. An indurated petrocalcic horizon is at 40 centimeters. Up to 5 percent petrocalcic fragments are found above the petrocalcic horizon. Except for the upper 4 centimeters, this pedon effervesces throughout.

JORN_023 – This pedon is within the Onite-Pintura complex map unit and classifies as the Berino series, Fine-loamy, mixed superactive, thermic Typic Calciargids. Berino is a named minor map unit component. This pedon has a moderately well-developed calcic horizon and a weakly developed argillic horizon between 46 and 100 centimeters. This pedon only effervesces between 46 and 100 centimeters.

JORN_012 – This pedon is within the Onite-Pintura complex and classifies as the Wink series, Coarse-loamy, mixed, superactive, thermic Typic Haplocalcid. Wink is not a named major or minor map unit component. This pedon has a weakly developed calcic horizon between 59 and 100 centimeters. This pedon only effervesces between 59 and 100 centimeters.

JORN_029 – This pedon is within the Onite-Pintura complex. This pedon fits no established series and classifies as a taxon above family, Calcic Petrocalcid, Fine-loamy, mixed, superactive, thermic Calcic Petrocalcid. The Calcic Petrocalcid is not a named major or minor map unit component. This pedon as a moderately well-developed calcic horizon between 34 to 70 centimeters. This pedon also has an indurated petrocalcic horizon at 70 centimeters. This pedon only effervesces between 34 and 70 centimeters.

JORN_003 – This pedon is within the Wink-Pintura complex map unit and classifies as the Nations series, Coarse-loamy, mixed, superactive, thermic Typic Petrocalcid. Nations is not a named major or minor map component although Nations and Harrisburg, a named map unit component, classify the same. The Harrisburg series is from MLRA 30 in Utah and will no longer be used in MLRA 42. An indurated petrocalcic horizon is at 80 centimeters. Up to 5 percent petrocalcic fragments are found above the petrocalcic horizon. Except for the upper 10 centimeters, this pedon effervesces throughout.

JORN_024 – This pedon is within the Onite-Pajarito association map unit and classifies as the Nations series, Coarse-loamy, mixed, superactive, thermic Typic Petrocalcid. Nations is not a named major or minor map component although Nations and Harrisburg, a named map unit component, classify the same. The Harrisburg series is from MLRA 30 in Utah and will no longer be used in MLRA 42. An indurated petrocalcic horizon is at 84 centimeters. This pedon has a weakly developed argillic horizon between 6 and 30 centimeters. Except for the upper 6 centimeters, this pedon effervesces throughout.

JORN_001 – This pedon is within the Onite-Pintura complex. This pedon fits no established series and classifies as a taxon above family, Typic Petrocalcid, Fine-loamy, mixed, superactive, thermic, shallow Typic Petrocalcid. The Typic Petrocalcid is not a named major or minor map unit component. This pedon has an indurated petrocalcic horizon at 46 centimeters. Except for the upper 4 centimeters, this pedon effervesces throughout.

JORN_011 – This pedon is within the Onite-Pintura complex map unit and classifies as Pajarito, Coarse-loamy, mixed, superactive, thermic Typic Haplocambid. Pajarito is a named minor map unit component. Besides the weakly developed cambic horizon, this pedon has no other diagnostic features. This pedon effervesces throughout. Except for the upper 40 centimeters, this pedon effervesces throughout.

JORN_016 – This pedon is within the Simona-Harrisburg association map unit and classifies as the Simona series, Loamy, mixed, superactive, thermic, shallow Typic Petrocalcid. Simona is a named major map unit component. This pedon as an indurated petrocalcic horizon at 44 centimeters. 3 percent petrocalcic fragments are found above the petrocalcic horizon. This pedon is non-effervescent above the petrocalcic.