



PROFESSIONAL SOIL SCIENTISTS ASSOCIATION OF TEXAS

**Green Valley Field Tour
August 4 – 6, 2017**

**REGISTRATIONS POSTMARKED AFTER JUNE 30, 2017
MUST PAY LATE REGISTRATION PRICE**

*****REGULAR REGISTRATION RATE CUTOFF ~ FRIDAY, JUNE 30, 2017*****

****PAYMENT MUST BE MADE AT TIME OF REGISTRATION****

| REGISTRATION FEES | COST/PERSON (\$) | | QUANTITY | TOTAL (\$) |
|----------------------------------|------------------|------|----------|------------|
| | REGULAR | LATE | | |
| <u>FULL REGISTRATION</u> | | | | |
| Member/Non-Member | 100 | 125 | _____ | _____ |
| Spouse | 90 | 100 | _____ | _____ |
| Student | 80 | 90 | _____ | _____ |
| <u>WITHOUT FIELD TOUR</u> | | | | |
| Spouse (meals only) | 50 | 60 | _____ | _____ |

Total Amount Enclosed.....\$ _____

To register online, please complete pages 1 and 2 of this form and email your registration to treasurer@pssat.org. In the body of your email state that you wish to pay online. A PayPal invoice will be sent to your preferred email address within a week. The PayPal generated email will allow you to pay online with PayPal or major credit card.



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**GENERAL INFORMATION
GREEN VALLEY FIELD TOUR
ALPINE, TEXAS**

Name: _____ Spouse Name: _____

Guest(s) Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____ Email: _____

Occupation/Job Title: _____

Employer: _____

**REFUND REQUESTS MUST BE RECEIVED BY JULY 14, 2017.
NO REFUNDS WILL BE MADE AFTER THIS DATE.**

RETURN REGISTRATION FORM AND CHECK MADE PAYABLE TO PSSAT TO:

TRAVIS WAISER, PSSAT, 406 WESTWAY DR., KERRVILLE, TX 78028
PHONE: (830) 896-4911, ext. 4

OR

TO REGISTER ONLINE, PLEASE COMPLETE PAGES 1 & 2 OF THIS FORM AND EMAIL YOUR REGISTRATION TO treasurer@pssat.org. IN THE BODY OF YOUR EMAIL STATE THAT YOU WISH TO PAY ONLINE. A PAYPAL INVOICE WILL BE SENT TO YOUR PREFERRED EMAIL ADDRESS WITHIN A WEEK.

FOR MORE INFORMATION CONTACT CHANCE ROBINSON AT:
chance.robinson@tx.usda.gov



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HOTEL INFORMATION GREEN VALLEY FIELD TOUR ALPINE, TEXAS

The **Quarter Circle 7 Hotel** in Alpine has been chosen as the host hotel.

- <http://www.quartercircle7hotel.com/>
- A total of 30 rooms are blocked for this meeting.
- Room block is listed as “**Robinson**” at a rate of \$95
- Each person must make their own reservation using their personal credit card.
- To obtain the special rate you must call the hotel directly at **432-837-1100**.
- Room block and special rate expire on **July 14th, 2017**, so do not delay in reserving your room.
- Hotel **check-in** is Friday, August 4th
- Hotel **check-out** is Sunday, August 6th

SCHEDULE OF EVENTS GREEN VALLEY FIELD TOUR ALPINE, TEXAS

Friday, August 4th at Saddle Club ~ 211 E Holland Ave ~ Alpine, TX

- 5:30 PM Social Hour
- 6:15 PM Dinner
- 7:00 PM Discussion of Green Valley and Greater Big Bend region
- 9:00 PM Conclusion of Evening Activities

Saturday, August 5th Field Tour at O2 Ranch, Green Valley, Trans-Pecos, Texas

- 7:30 AM Vans will depart from Quarter Circle 7 Hotel
- 12:00 PM Lunch in the field (box lunches provided)
- 5:00 PM Vans will return to Quarter Circle 7 Hotel

Saturday evening, August 5th at Reata Restaurant ~ 203 N 5th St ~ Alpine, TX

- 6:30 PM Social/Mixer
- 7:30 PM Dinner on the Back Patio



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FIELD TOUR OVERVIEW

Friday Evening Presentations

- Overview of the Geology, Soils, and Climate of the Big Bend Region
 - Dr. Lynn Loomis, USDA-NRCS Marfa Soil Survey Office
- Archaeology of the Big Bend Region and Green Valley
 - Andy Cloud, Center for Big Bend Studies
 - <http://cbbs.sulross.edu/>
- Landforms, Soils, and Geomorphology of Green Valley
 - USDA-NRCS Marfa Soil Survey Office Staff
- Vegetation and Rangeland Restoration Efforts in Green Valley
 - USDA-NRCS Marfa Soil Survey Office Staff

Saturday Field Tour at the O2 Ranch (35 miles south of Alpine)

- <http://www.lykesranch.com/02ranch.cfm>

Green Valley, Trans-Pecos Texas is dominated by soils forming in zeolitic parent materials (residuum, pedisediment, and stream alluvium) derived from tuffaceous bedrock of the Duff, Pruett, and Devils Graveyard formations (Goldrich and Elms 1949, Stevens et al. 1984). These zeolitic soils have CEC/clay ratios greater than 1.00. Consequently, they possess available water capacity that is higher than similar soils that formed in parent materials with non-zeolitic mineralogy.

Table 1. Classification, CEC/Clay ratio, dominant landform, and estimated geomorphic surface age of soils.

| Soil name | Family or higher taxonomic class | CEC / Clay ratio | Landform | Geomorphic Surface Age |
|--------------------------------------|---|---------------------|-------------------|---------------------------|
| Beewon | Loamy-skeletal, mixed, superactive, thermic Ustic Calcigrids | 0.65 | pediment | mid-Pleistocene |
| Quadria | Fine, mixed, superactive, thermic Ustic Natrargids | 1.21 | pediment | mid-Pleistocene |
| Quadria-saline taxadjunct | Fine, mixed, superactive, thermic Ustic Natrigypsid | 1.21 | pediment | mid-Pleistocene |
| Chilicotal | Loamy-skeletal, mixed, superactive, thermic Ustic Haplocalcids | 1.35 | alluvial fan | early-Holocene |
| Borunda | Fine, mixed, superactive, thermic Ustic Calcigypsid | 1.46 | erosional remnant | late-Pleistocene |
| Rockpens | Loamy-skeletal, mixed, superactive, thermic Sodic Ustic Haplocambids | 1.56 | strath terrace | late-Pleistocene |
| Musgrave | Clayey, mixed, superactive, calcareous, hyperthermic, shallow Typic Torriorthents | 1.42 | erosional remnant | late-Holocene |
| Straddlebug | Fine-loamy, mixed, superactive, thermic Sodic Ustic Haplocambids | 0.93 | stream terrace | early-Holocene |
| Nillo | Fine-silty, mixed, superactive, calcareous, thermic Ustic Torrifluvents | 0.88 | flood plain | late-Holocene |



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FIELD TOUR OVERVIEW

Potential topics of discussion during the field tour include:

- Interpretations for soils forming in zeolitic parent material
- Relationships of soil erosion to ecological state and transition models
- Quaternary stratigraphy
- Geomorphic surface age
- Relationships of the soil forming factors to environmental covariates (GIS data)

Table 2. Active genetic factors driving vegetation and soil development within Green Valley.

| Factor | Description |
|-----------|---|
| Climate | Mean annual air temp: 18 C; Mean annual precip: 325 mm; annual water deficit: 650 mm |
| Organisms | Chihuahuan Desert flora; plants adapted (drought avoidance / tolerance) to water stress |

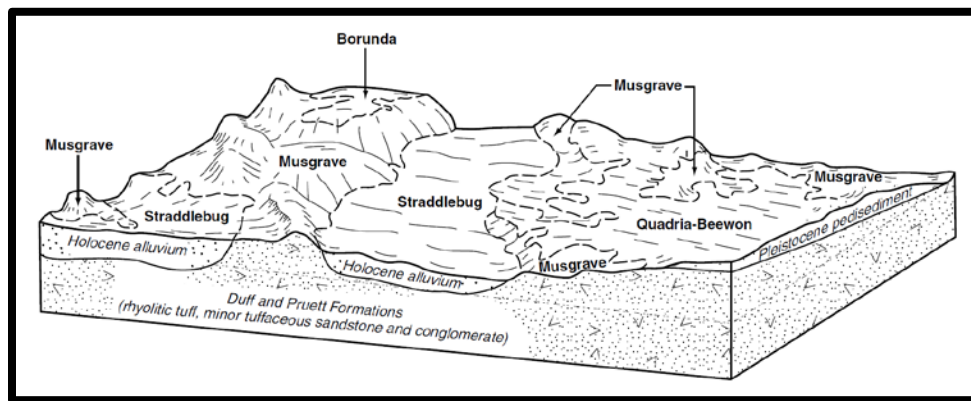


Figure 1. Block diagram illustrating geomorphic relationships of dominant soils.

Recommended Reading and References

- Goldich, S.S., and M.A. Elms. 1949. Stratigraphy and Petrology of Buck Hill Quadrangle, Texas. Geological Society of America Bulletin 60:1133-1182.
- Keller, D. W. 2005. Below the Escondido Rim: A History of the O2 Ranch in the Texas Big Bend. Center for Big Bend Studies, Sul Ross State University, Alpine, TX. 261 pp.
- Stevens, J.B., M.S. Stevens, and J.A. Wilson. Devil’s Graveyard Formation (new) Eocene and Oligocene age, Trans-Pecos Texas. Texas Memorial Museum Bulletin 32. 31 pp.