**DSM Focus Team**

**FY24 Quarterly Meeting**

9/19/24

1. Suz
2. Jess –
3. Travis –
4. Dave –
5. Alex –
6. Stephen –
7. Jon – absent
8. Tiffany
9. Shawn
10. Jim
11. Joe –
12. Colby – absent
13. Steph – absent
14. Greg –
15. Nathan – absent
16. Suzanne – absent
17. Jamin – absent
18. Francine – absent
19. Jay – absent
20. Zach
21. Betsy –
22. Dylan – absent
23. Zamir –
24. Chad – absent

Agenda

* Sub-Team updates
  + Practitioner
    - Mentor projects
      * Six active projects – varying stages
      * Informal mentoring in LA – RSS published this year
      * Will be spreading the word about mentoring in the first quarter of FY24
    - Training
      * RSSSA coming up
      * Survey for tools and training
    - Standards
      * New scale info in NSSH
      * SSURGO definition
    - Raster interpretation engine detail
  + Properties
    - SOLUS100
      * Paper – accepted for SSSAJ
      * Fact sheet – distributed at NCSS meetings
      * Landing page – done [Soil Landscapes of the United States (SOLUS) | Natural Resources Conservation Service (usda.gov)](https://www.nrcs.usda.gov/resources/data-and-reports/soil-landscapes-of-the-united-states-solus)
      * SOLUS100 will be announced after paper is published
      * CEAP-GL tool – SVI wind <https://gis.sc.egov.usda.gov/portal/apps/webappviewer/index.html?id=2f111f2271bf4d7484ae4dcacf77f29f>
    - SOLUS30
      * Determining method
        + Apply SOLUS100 modeling framework using 30m covariates
        + Explore new modeling framework using deep learning – improved modeling techniques and space-time framework
      * Finalizing covariates
        + STEDUS – GEE asset
        + SPEDUS – in progress; moving forward now after adopting a tiling scheme for the resulting layers – still fine tuning the tiling
    - Details – interp engine, SOLUS30
  + Ecological Site
    - Standards – in progress
    - Products
      * Details – completing projects this fall
    - Slides on how ESDs are used in conservation planning – will frame how we develop products
  + Upcoming
    - DSM FT annual report
    - Practitioner calls – please volunteer or provide suggestions
    - SSSA conference
    - DSM-GlobalSoilMap – Jan 2025 – India
    - GIS Day – Nov 20
    - Colby, Chad – send fact sheet
    - Fact sheet link on webpages – SOLUS and DSM FT

6/10/24

*Sub-team updates posted in Teams channel in lieu of a meeting this quarter*

* Practitioner Sub-Team
  + Ongoing mentor projects in Missouri, West Virginia, Idaho, Iowa, Michigan, and Vermont
  + The Sentinel 2 scripts on GEE have been updated
  + Investigating effective removal of artifacts from DEMs and center pivot field signatures from spectral data
  + Active backlog items include SSURGO definition in the NSSH, metadata best practices for GDA compliance, and an expanded RSS job aid for the RSS process, defining modeling domains, and combining adjacent RSS projects
* Properties Sub-Team
  + SOLUS100
    - SOLUS100 fact sheet developed for use at NCSS regional conferences
    - Public GCP bucket with all maps now available
    - Manuscript in revision with SSSAJ
    - SOLUS landing page drafted
    - DS Hub project combining SOLUS100 and SSURGO for conservation water quality models will be presented at the north central NCSS meeting and SWCS this summer
  + SOLUS30 scoping has begun and work is expected to ramp up FY24 fourth quarter
  + STEDUS – addressing missing terrain covariate layers and base DEM
  + SPEDUS – CONUS spectral data stack work is ongoing
* Ecological Site Sub-Team
  + Draft Raster Ecological Survey (RES) section is in review with sub-team. Review deadline is Friday, June 21st.
  + Soils-ES details are ongoing
    - Nathan Roe is working with the Sequoia and Kings Canyon NP dataset to
      * Develop robust methodologies for working with vegetation data
      * Create a standardized suite of ecological variables for pedon data
      * Examine the relationship between ecological sites and environmental gradients
      * Produce spatially explicit models of ecological sites
    - Greg Schmidt is working with witness tree data to develop niche models to inform development of LRUs and ESGs
* Collaboration between DSP team and DSM team is ramping up with DSP Raster Products Task Force led by Matt Bromley and Jessica Philippe

3/12/23

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2. Jess –
3. Travis –
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* Practitioner Sub-Team
  + Four mentor projects – MTNF, MI, VT
  + New backlog of projects – looking for others to contribute
    - RSS process and QA
    - Modeling domains
    - Managing raster and tabular
  + Update job aids
  + DSM Practitioner call – 50-60 people each month
    - Spatial sampling
    - ES Soil Details
    - Pedometricians
* Properties Sub-Team
  + SOLUS100 update
  + Other activities
* ES Sub-Team
  + ES Soil Details – both started as of this week
    - Goal is to create Raster Ecological Survey products
    - Demonstrate process, use, help build standards
    - Nathan
      * Working with Sequoia and Kings Canyon NP dataset
      * Objectives
        + Develop robust methodologies for working with vegetation data.
        + Create a standardized suite of ecological variables for pedon data.
        + Examine the relationship between ecological sites and environmental gradients.
        + Produce spatially explicit models of ecological sites.
    - Greg
      * Michigan MLRAs – using witness tree data for species distribution modeling
* Pedometrics
* Other items/announcements
  + Publicly shared data must have metadata that meets NGDA
  + Needs to be added as a project milestone

12/12/23

1. Suz
2. Jess –
3. Travis –
4. Dave –
5. Alex –
6. Stephen – absent
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11. Joe –
12. Colby – absent
13. Steph – absent
14. Greg –
15. Nathan –
16. Suzanne
17. Jamin – absent
18. Jay
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* Practitioner Sub-Team
  + Raster Soil Survey focus
    - Identified need for more training, job aids, etc to support SSO and RO with both development and correlation
    - Team is working on supporting documentation
  + Mentoring projects
    - Four active ones
* Ecological Site Sub-Team
  + Engaging in some paper discussions to expand knowledge and generate ideas for our work
  + Developing standards for Raster Ecological Surveys in NSSH Part 648
  + Two 120-day details advertised to work on RES projects
* Properties Sub-Team
  + SOLUS100 wrap up
    - Final map processing
      * Trimmed for linear adjustment extreme values
      * Normalization for sand, silt, clay
      * Mask NOT PUB areas from SSURGO
      * Apply naming convention
      * Metadata
    - Publication
      * Draft manuscript
      * Repository for scripts and supporting information
      * Create public GEE asset
      * Create public GCP storage bucket
  + SOLUS and SSURGO combination being tested in water quality models for conservation planning with the DS Hub crew
  + Other activities
    - Standardized 30m covariates
      * Elevation – STEDUS (done)
      * Spectral – SPEDUS (in progress)
        + Scripts for Landsat and Sentinel composites are working
        + Testing derivatives, seasonality, etc.
      * Will become GEE assets…eventually public
    - R Interpretations Engine detail (Jan 2024)
      * Refine and enhance previous work be Colby and others so the code can handle large datasets (like SOLUS) and run efficiently, expand interpretations
  + Pedometrics meeting
    - Emails going out soon to presenters
    - One more spectroscopy abstract than DSM…interesting
    - Conference has not been approved for SPSD – won’t until after CR Jan 17th

**FY23 Quarterly Meeting**

7/27/23

*Sub-team updates posted in Teams channel in lieu of a meeting this quarter*

* Practitioner Sub-Team
  + Standards
    - NSSH Part 648 has been updated and is available online <https://directives.sc.egov.usda.gov/viewerFS.aspx?hid=48720>
    - Guidance/documentation/checklist for regions to aid in QA/QC of RSS in progress
  + Training
    - Delivered all courses in the DSM curriculum this fiscal year
    - DSM with ArcSIE is scheduled for Aug 14-18 in Lincoln and will be taught with the new ArcPro version of ArcSIE
    - Remote Sensing for Soil Survey Applications will be updated for delivery next fiscal year. Content will remain the same but largely replacing ERDAS Imagine and integrating ArcPro, R, and GEE for exercises
* Properties Sub-Team
  + SOLUS100 open comment period conducted during the month of June. 12 people submitted 30 comments through the feedback form provided in the GEE apps and a handful of others via email. The team will review comments once Travis is back from his field detail.
  + SOLUS100 was presented at the National NCSS meeting in Bismarck
  + Exploration of SOLUS use in conservation-related modeling tools is underway
* Ecological Site Sub-Team
  + Standards sub-committee working on adding language to Part 648 for Raster Ecological Surveys (RES) to support products such as MLRA update and ecological site groupings, initial project mapping, and associated raster ecology products (species distribution mapping, state mapping)
  + Exploring ways to build on IBM clustering workflow for ecosite groupings with updated data and methods with goal to expand to a national product

4/27/23

1. Suz
2. Jess – absent
3. Travis – absent
4. Dave – absent
5. Alex – absent
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10. Jim
11. Joe – absent
12. Chad – absent
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24. Rob – absent
25. Charlotte – absent

Agenda

* Sub-Team updates
  + Practitioner
    - Part 648 – currently with editors
    - Training
      * All courses taught this FY
      * Update to ArcSIE with ArcPro version
      * Update to Remote Sensing in FY24 for current software approaches
    - ID field week project
      * Global model uncertainty to aid field sampling design
      * Betsy is interested in using entropy for guiding validation sampling – she’ll reach out when they’re ready and we’ll chat with her discussing some ideas
  + Properties
    - SOLUS100 internal review
      * Review guide
      * Review apps
      * National bulletin
      * Webinar
  + Ecological Site
    - GNP product
    - Standards
  + Highlights
    - GCP
    - DSM/GSM meeting

1/26/23

1. Suz
2. Jess
3. Travis
4. Dave – absent
5. Alex
6. Stephen
7. Jon
8. Tiffany
9. Shawn
10. Jim
11. Joe – absent
12. Chad – absent
13. Colby – absent
14. Steph
15. Greg
16. Nathan
17. Suzanne
18. Jamin – absent
19. Zach
20. Jay – absent
21. Betsy – absent
22. Dylan
23. Zamir
24. Rob – absent
25. Charlotte – absent

Agenda

* DSM FT updates
  + DSM FT structure
  + SBS DSM team
    - 2026 projects
  + GCP activity
    - SBS, ROs, SSOs, collaborators (WVU, NMSU)
    - Testing for various project scales
    - Scripts/repos/training
  + DSM/GSM conference
* Sub-Team updates
  + Practitioner (Jess)
    - Part 648
    - Training
    - Mentoring
      * 6 projects
      * ID Field Week
        + Local to global modeling
    - Practitioner discussions
  + Properties (Suz)
    - SOLUS100 v3 process and results
      * Review period (March)
      * Travis authoring paper
    - SOLUS30
    - GSP
      * Nutrients and erosion
      * Short timelines: April and Oct 2023
  + Ecological Site (Shawn)
    - Overview
    - Activities
    - Goals/Priorities
  + DSS priorities recap