Existing Vegetation Classification, Mapping and Inventory Technical Guide Revision Core Team Meeting
June 8 – 10, 2010
RSAC/GSTC, Salt Lake City, UT

Attendance: David Tart, Mark Riley, Carlos Ramirez, Jim Gerleman, Andy Lister, Kevin Megown, Jim Ellenwood, Linda Spencer, Ralph Warbington, Steve Solem, Wendy Goetz, Greg Kujawa, Dave Cleland, Patrice Janiga, Ken Brewer, Brian Schwind, Tom Bobbe

Introduction

Brian Schwind (Director RSAC) welcomed the Core Team to RSAC/GSTC and stressed the importance of this effort to the work RSAC does in support of NFS units and other customers. RSAC staff has benefited from the existing Technical Guide and are excited about participating in its revision.

Core Team Introductions included attendees listed above.

Tom Bobbe (NFS Resource Information Manager) provided the Core Team an overview of the Forest Service resource information structure, budget and review processes and context for the Existing Vegetation TG revision effort. Oversight and review of progress on Information Asset projects, which include this effort, is continual and closely monitored by the CIO and members of the Information Resources Board. Performance on budget and on time is expected and the project will be accountable for the scope and timeline provided in the budget request approved by the Executive Leadership Council. Tom is encouraged to see the work done to organize and initiate this effort.

Project Overview and Schedule

Greg Kujawa (Co-Lead for the Steering Team) provided background on project sponsorship by the Sustainable Landscape Management Board of Directors (SLMBOD). SLMBOD is supportive of the scope of this effort and timelines. The draft project charter presented to the SLMBOD was modified to include signatures for all WO Directors within this cross-deputy group. Discussion of the charter with the Core Team identified two edits that should be made before signature:

- Drop “monitoring” from the Tier 2 description as the focus of the technical guide is on classification, mapping and inventory.
- Modify the last bullet under Desired Characteristics of Protocols to remove “…and statistically…” By definition, if scientifically valid, protocols should also be statistically valid when appropriate.

Comments on the draft charter are welcome and should be sent to Greg for consideration by the close of the week. Greg will be meeting with the SLMBOD for signature of the charter next week.
Greg reviewed the organizational structure, roles of various teams, and operational guidelines for the project. The Core Team’s relationship to the Steering Team and the need for the Core Team to frame recommendations for issue resolution so the Steering Team can take action was emphasized by Greg. The Steering Team may take issues to the SLMBOD for resolution or present policy issues that are beyond the scope of the revision effort.

Ralph Warbington (Core Team Leader) provided an overview of the approach to revisions in Tier 1 and Tier 2. Ralph reviewed the structure of the meeting agenda and meeting design for working to frame the scope of Tiers 1 and 2 in greater detail during the course of the meeting.

Steve Solem (Project Advisor) provided an overview the project schedule and project management tools to support the Core Team. Steve used the schedule to illustrate interactions between the Core Team’s development efforts and the Steering Team would proceed during the course of the project. Patrice Janiga discussed project management principles that are embedded within the project scheduling tools. These include progressive elaborate with greater detail as tasks move into the near term and the use of the Steering Team to refocus the project scope or adjust the schedule based on recommendations from the Core Team.

The Core Team discussed a number of connections and linkages that are important to the revision effort or that have changed since the original work on the Technical Guide:

- The USFS monitoring team for climate change report should be looked at for information requirements for existing vegetation.
- Need to review FSM 1940 Inventory Monitoring and Assessment to determine policy and direction that can be deleted from the current technical guide. For examples, Roles and responsibilities are established in the FSM and do not need to be repeated in the Technical Guide.
- 1909.14 Handbook, which tiers to FSM 1940 is in various stages of completion. Section 20 provides specific direction on Technical Guide organization and content.
- FSH 2209.14 rangeland inventory and monitoring includes sections on classification and mapping which could be affected by revisions of the Existing Vegetation TG.
- FSM 1960 and supporting FSH’s for economic and social analysis and assessment may be another reference to look at.
- CEQ Climate change working teams on carbon stocks, vulnerability assessments may also provide new business requirements for existing vegetation information.

**Tier 1 Scope Development**

The scope of Tier 1 revisions is defined in the charter and includes a focus on revisions needed to conform to new FGDC standards. Review of the Technical Guide to remove policy statements redundant to FSM 1940 or are appropriate for the FSM is a second emphasis area. This effort will also include reformatting the Technical Guide to be consistent with draft FSH 1909.14, Section 20 and removal of...
content not relevant to the procedures and implementation of the Technical Guide is the final focus area.

**Existing Vegetation Classification:**

David Tart (Regional Ecologist, R-4) provided an overview of the revised FGDC Existing Vegetation Standards. Dave’s presentation will be posted with these notes. Key points raised in this discussion include:

- Changes to the FGDC Vegetation Classification Standard, dropping Physiognomic Division, Order, Class and Subclass in the higher levels, Revising Formation levels and adding Division, Macrogroup and Group to the middle levels to allow for more utility above the Alliance and Association bottom floristic levels. The new standard now has 8 levels.
- FGDC Standard is the process of how the National Vegetation Classification (NVC) will be developed, managed, and updated.
- USGS, NFS, Nature Serve and Ecological Society of America have an existing MOU to work together on peer review process, software, keepers of the database and description development.
- Currently NVC Top 4 Levels (Formation Class, Formation Subclass, Formation, and Division) are relatively stable. NVC Groups and Macrogroups are being drafted and peer-reviewed. Final descriptions for levels down to the Group are probably 2-3 years away from being completed. (Note: Don Faber-Langendoen thinks that the hierarchy will be stable down to the group level by Dec. 2011.)
- NRIS tables should be updated to add the new NVC classification after the types are relatively stable (after Dec. 2011). The older NVC classification should be retained as a legacy system.
- Most regions either have or are developing Dominance Type Classifications that will need to be cross-walked to NVC at least to the Group level.
- Need to check definitions in the FGDC Standard with Tech Guide definitions: for example trees and shrubs.
- What is the change required in the technical guide for NVC classification use and or contribution to the alliance and associations? Regions are developing their own regional dominance types and community types.
- Do we want to have a goal or a requirement to crosswalk any local classification system to the Group level of the NVC?
- What are the implications for requiring the use of NVC classification now vs. continued use of roll your own regional classification system?
- Guide should address other classification systems and when it may still be legitimate to use them.
- Need a letter to ESA and Vegetation Panel for emphasis on providing keys for the top 6 levels down to the Group level and timeline to enable use in the technical guide revision and facilitate the development of classification crosswalks.
- Addressing regional business requirements may lead to the use of local classification systems.
• Discussion of when or if ever there will be keys for Alliance and Association Levels of the NVC classification. Currently there is no plan for this to be completed as part of a national effort. This will require each classification / mapping project or possibly each Region to develop its own keys, but likely to result in the same vegetation type name being used for different floristic conditions on the ground.

• Discussion on if any NFS data collection and classification efforts would contribute directly to the NVC Alliance and Association levels. Dave explained that it was important to follow the field collection requirements for classification and contribute to the plot database.

• The current version of Existing Vegetation Classification and Mapping Technical Guide for classification data collection requirements, guidance, and collection protocol are all consistent with the new version of the FGDC Standard and the new NVC hierarchy, so little or no changes are needed to this section of the Guide.

This discussion identified the need to revise the following sections related to Classification:

1.1.2 - Vegetation Classification Standards - section needs to be re-written, introduce new classification levels, and reference the new FGCD – NVC document.

1.3.1 - Vegetation Classification Concepts and Definitions – section needs to be reviewed minor changes made for consistency with new NVC hierarchy.

1.5.1 - Relationship to the FGDC National Vegetation Classification Standard – section will need to be updated to reflect the revised standards and updates in the guide.

2.2.4 – Association Criteria – section will need to be checked for consistency with the new standards.

2.2.5 – Alliance Criteria - section will need to be checked for consistency with the new standards.

2.4.9 - FGDC Physiognomic Crosswalk Attributes - section will need complete revision since physiognomic levels of the NVC classification were dropped in the revised standards.

Appendix 2a - Proposed moving field forms into main body of section 2.

2.7.3 - Vegetation Type Metadata - review for consistency with new NVC

Consider what to do with Appendix 1A, 1B, and 1C in light of new standards, and if we need for mapping. (Working Group for Lifeform / Physiognomic Order for mapping attribute should identify what to keep.)
Existing Vegetation Mapping:

Ralph Warbington provided an overview of the existing mapping attributes GIS codes and definitions that would need to be dropped or modified due to the new NVC standards. Key points raised in this discussion include:

Should one or more of the legacy Physiognomic Division, Order, Class or Subclass be kept as a map attribute? If kept, do we need new titles for these?

Recommendations:

- Drop Division, Class, and Subclass map attributes from the guide and the GIS data dictionary. These were identified as required by the previous NVC standard but are generally derived after mapping has been completed using crosswalks from vegetation type(s).

- There is however, a continued need for a lifeform / cover map attribute, equivalent to Physiognomic Order. Team agreed this needed to be resolved soon to make needed changes to the Guide for consistency with the new NVC standard. A working group of core team members agreed to handle this need.

Lifeform / Cover Revisions Working Group: Mark Riley, Carlos Ramirez, Kevin Megown, Andy Lister, and Dave Tart. Kevin Megown will be the working group leader.

Scope: Modify Physiognomic Order and/or develop a classification for a mapping attribute of lifeform / cover. Contact vegetation mapping program managers; find out what classification each Region is currently using. Provided a classification with definitions and identify what are core and core optional attributes to minimize the potential need for regional add-ons. Develop classification Key(s) as needed. The Key needs to address cover by lifeform rules, as well as non-vegetated conditions. Review Appendix 1A, 1B, and 1C and make recommendation on deletions and or modifications. Provide a Draft product for review by July 1 with core team conference call soon after.

Should the floristic classification requirements change for mid-level? Currently SAF and SRM covetypes are the only requirement for mid level maps. Should NVC Macrogroup, Group and/or Alliance be required instead of, or in addition to SAF and SRM cover types?

- Team recommend making SAF and SRM cover types as core optional, as these are common classification systems in use. Changing these to core optional will have the least impact on legacy map products and the GIS data dictionary.

- Add the new NVC Group level to mid-level map attributes as the most detailed floristic level required for mid level maps. This will allow sharing of map products across Region boundaries and facilitate incorporation into bioregional and national level mapping products.
Should the floristic classification requirements change for base level mapping? Should NVC Group be required instead of, or in addition to Alliance?

- Team recommends no change for base-level mapping. Keep Alliance as the floristic level requirement for base level mapping.
- Integrate mid-level changes into base-level mapping standards.

Existing Vegetation Mapping: The following is a list of Sections and Tables that will need to be significantly modified to be consistent with the new NVC standard, primarily due to the deletions of Physiognomic Division, Order, Class and Subclass. These sections and Tables will also have to be modified to be consistent with the revised Lifeform/Order mapping attribute being developed by the working group.

Table 1.2 Required Physiognomic Map Attributes

3.2.2.2 Map Attributes

3.2.4.2 Produce a Mid-Level Existing Vegetation Map – Step 5

Physiognomic Classes Tables 3.3a and 3.3d

Table 3.2 Anderson 1 / FGDC Physiognomic Class

Table 3.3a Physiognomic Map Attributes

Table 3.3b Physiognomic Class – Order need to break out non-vascular from herbaceous

Table 3.16 Mid Level Mapping Methods

Table 3.17 Base Level Mapping Methods

Tables 3.21a and 3.21b Aggregation Logic

Table 3.22 Error Matrix Example

Table 3.3c Physiognomic Classes – Class

Table 3.3d Physiognomic Classes – Subclass

Table 3.4 Floristic Map Attributes

Figure 3.1 Map Units and Attribute Example

Table 3.7 Map Attributes Accuracy Goals and Requirements

3.2.3.3 Map Unit Design Example 1

Table 3.12 Physiognomic Type Classification Taxonomic Units and Map Units

Appendix 3G
Summary:

Tier 1 Revision Scope was defined by the group to include three revision tasks. Work Groups were identified to develop these revisions. The overall schedule for completing Tier 1 and 2 revisions is discussed in later portions of these notes.

<table>
<thead>
<tr>
<th>Revision Task Scope</th>
<th>Working Group</th>
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<tbody>
<tr>
<td>Guide Edits - Classification</td>
<td>David Tart, Ralph Warbington</td>
</tr>
<tr>
<td>Policy Review and Text/Table Revisions</td>
<td>Ralph Warbington, Kellen Nelson</td>
</tr>
<tr>
<td>Section 1 - Introduction edits and suggested revisions</td>
<td>Andy Lister (by 7/15/10)</td>
</tr>
<tr>
<td>Life form/Cover Revision for Mapping</td>
<td>Kevin Megown, Mark Riley, Carlos Ramirez, Andy Lister, David Tart</td>
</tr>
<tr>
<td>Draft by 7/1/10</td>
<td>To be determined after July core team conference call.</td>
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Tier 2 Scope Development

The process for defining the scope of Tier 2 followed the process steps described below:

1. Review list of recommendation for revision of the Technical Guide developed from the 2007 CMI Workshop proceedings
   a. Refine recommendations
      i. Missing recommendations
      ii. Wording changes (substantial)
   b. New recommendations since 2007 (not addressed by Tier 1 NVC revisions)
2. Complete refined list of recommended revisions
3. Priority setting to identify proposed scope of Tier 2 revisions – Big rocks + selected little rocks
   a. Identify “big rocks” (Top Priority) from list of recommended revisions
   b. Identify “little rock” revisions that could be done with relatively little effort. Remaining items are by definition “little rocks”
4. Workload analysis of Tier 2 proposal
5. Describe Tier 2 revision proposal scope and recommended working group structure. This information is used to “charter” or task working groups. Working groups will include at least one member of the Core Team.

Step 1 – Review Preliminary List of 2007 Workshop Recommendations

Summarized Recommendations from the 2007 Vegetation Meeting for revision of the Existing Vegetation Classification and Mapping Guide:
1. Review and revise protocol for “map unit design” to improve standardization of aggregation of classes into viable map units considering scale and accuracy.
2. Add guidance for identifying what map attributes are useful and appropriate to map as continuous variables, and protocols for mapping these variables.
3. Add guidance and or standards for cartographic displaying and printing vegetation map products at different scales.
4. Review and validate map Accuracy Assessment standards, methodology for both statistical and utility assessments and overall accuracy, and add protocol for cost benefit analysis of increasing map accuracy considering smaller minimum mapping units as well as accuracy of attributes.
5. Review and validate guidance on pixels vs. polygons as mapping features.
6. Review and validate agency business needs and customers for each map scale; National, Broad, Mid- and Base-level.
7. Address database needs for developing reference tables, stewarding and populating FGDC classification descriptions, names and database codes for all levels of the revised National Hierarchy, including Alliances and Associations both formal and provisional types, for use in map unit design and map attribution.
8. Review existing guidance, and add protocols for updating maps and assessing accuracy due to change of existing conditions on the ground, vs the production date of the current version of existing vegetation spatial data. Consider disturbances both natural and man caused as well as changes due to vegetation in-growth / re-growth.
9. Address issues with the status of floristic classifications available for mapping and revise guidance on consistency for across Regional use. Regions need to develop more consistent Dominance Type Classifications for addressing across regional issues such as the Sage Grouse. In the current guide, SAF and SRM cover type systems were identified for use in mapping until FGDC standard typing was available to meet this need. Moving forward in establishing and implementing the FGCD formal Middle Levels of the National Standards of: Division, Macrogroup, and Group are needed to replace the use of existing cover type systems.
10. Address and add guidance on how to integrated inventory efforts with mapping and classification efforts; to refine and maintain classification systems, improve map accuracies, and be more cost effective for the agency. Consider both forested and non-forest vegetation.
11. Review and revised guidance on use of sample based data for classification, mapping, accuracy assessment, and modeling efforts. Address and consider data storage and accessibility for classification, map and sample based inventory data.
12. Review and revised guidance on how to integrate the four hierarchical levels of National, Broad, Mid, and Base presented in the mapping process for classification and inventory processes.
13. Add to the guide and fully integrate Vegetation Inventory with Classification and Mapping for designing and accomplishing a statistically valid inventory for each level: National, Broad, Mid and Base. To raise the National recognition, emphasize the Mid level inventory as necessary to provide adequate National Forest Planning and Monitoring information for all vegetation both forest and non-forest. Discuss relationships with other technical guides, handbooks, and applications.
14. Add, identify and provide guidance on appropriate stratification, tabular compilations, and associated spatial products. Consider how different kinds of sample plots, stand exams, and FIA plot inventory data might be used, as well as how current the information must be to adequately represent current conditions. Consider current standards and protocols and or develop supplemental standards and protocols for statistically based inventories for each of the hierarchical levels for data collection, storage, compilation and analysis.
15. Add, identify and provide guidance and protocols for filing the information gap associated with non-forest conditions for each of the hierarchical levels.

16. Add guidance and protocols for spatial modeling and list of potential uses. Define and differentiate mapping vs. modeling. Address appropriate modeling for each of the hierarchical levels. Provide methodology on assessing statistical accuracy of surface predictions, reliability, and limitations of current applications. Discuss cartographic products, smoothing, filtering, and color palettes.

**Step 2 - Revised List of Recommendations**

Edits to the preliminary list and additional recommendations (highlighted) were identified by the Core Team:

6. Review and validate agency business needs and customers for each map scale; National, Broad, Mid and Base. “(example: climate change, carbon stocks)”

9. Address issues with the status of floristic classifications available for mapping and revise guidance on consistency for across Regional use. Regions need to develop more consistent Dominance Type Classifications for addressing across regional issues such as the Sage Grouse. In the current guide, SAF and SRM cover type systems were identified for use in mapping until FGDC standard typing was available to meet this need. “Moving forward in establishing and implementing the FGCD formal Middle Levels of the National Standards of: Division, Macrogroup, and Group are needed to replace the use of existing cover type systems.”

17. Nearest Neighbor Modeling guidance and protocol for use for mapping.

18. Add a Cost Benefit Analysis base level and mid level mapping.

1/ added by Ralph Warbington due to the revised standards now available

2/ added by Core Team as additional work items

**Step 3 – Priority Setting**

The Core Team identified their “big rock” or highest priorities and “low hanging fruit” from the “little rock” list:
## Step 4 - Tier 2 Workload Analysis

The Core Team identified which revision tasks (rocks) were associated with each other and the level of effort associated with a general task description. Core Team work groups were identified to develop more detailed revision scope statements for each task group.

<table>
<thead>
<tr>
<th>Revision Task Scope</th>
<th>Effort</th>
<th>Work Group</th>
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<tbody>
<tr>
<td>13. Integration of inventory</td>
<td></td>
<td>Ken Brewer</td>
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<tr>
<td>14. Appropriate uses of inventories</td>
<td></td>
<td>Jim Gerleman</td>
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<tr>
<td>4. Map accuracy assessment (Discussion of variation within map units as well as types of accuracy assessments)</td>
<td>H</td>
<td>Carlos Ramirez</td>
</tr>
<tr>
<td>1. Map unit design (integrate inventory into discussion – what is mapped vs. sampled, link to and expand INA discussion re: inventory)</td>
<td>M</td>
<td>Andy Lister</td>
</tr>
<tr>
<td>5. Pixels vs. polygons (see TG Section 3.2 – additional/clearer discussion – tie to business needs) (summarizing pixels to polygons)</td>
<td>M</td>
<td>Jim Ellenwood</td>
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<tr>
<td>8. Update process (existing RSAC and Regional papers)</td>
<td>M</td>
<td>Mark Riley</td>
</tr>
<tr>
<td>6. Review and validate agency business needs (emerging issues/policies, e.g., watershed condition assessments, climate change, all-lands landscape conservation, etc.)</td>
<td>L</td>
<td>Linda Spencer</td>
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<tr>
<td>15. Information gaps in non-forest (Policy issue briefing paper – look for existing paper from working group)</td>
<td>L</td>
<td>Ralph Warbington</td>
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<tr>
<td>2. Continuous map variables (additional discussion/edits) [Merged later with Map Design]</td>
<td>L</td>
<td>Will pick up later</td>
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<td></td>
<td></td>
<td>Mark Riley</td>
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<td></td>
<td></td>
<td>Carlos Ramirez</td>
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<td></td>
<td></td>
<td>Jim Ellenwood</td>
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</table>
Step 5 – Develop proposed scope of Tier 2 Revision

Core Team work groups described above developed scope descriptions, process guidance and recommended work group composition for each Work Group. This information coupled with schedule will provide the basis for developing Work Group charters.

A. Inventory Integration Working Group

Scope: Design and describe a process for integrating inventory data into map products in all four levels of the hierarchy. The primary approach will be post-stratification of designed-based inventory data insuring statistical validity. This task team should leverage expertise and information gathered in the development of the Design and Analysis Tools for Inventory and Monitoring (DATIM). Consider including DATIM core team members on task team.

Deliverables

1. Develop a new section on inventory and the relationship to classification and mapping.
2. Identify and/or create the linkages to other sections in the technical guide.

Inventory integration questions and concepts to address:

1. Address the question, what is an inventory?
2. Compare and contrast forest inventories with other monitoring efforts.
3. Need to address business needs and the impacts on sample sizes and statistical validity.
4. Need a discussion of stratification and how business needs drive the appropriate level of stratification to meet those needs.
5. Brief overview of how inventories are used in different Regions (i.e R1, R5, R6).
6. Sampling strategies for intensification, including targeted stratification and tessellation approaches, etc. Address what the pros and cons of different methods are.
7. Need to discuss all of the stratification approaches within the context of inventory compilation.
8. Guidelines for cost/benefit analysis of different sampling strategies to meet Regional needs.
9. If you do a full intensification (i.e double, triple, etc.), need to deal with how it fits in with compilation.
10. What data needs to be collected on the plot for compilation purposes and to make it statistically viable?
11. Is it appropriate to split at the subplot level or not? What about dealing with condition class?
12. Business needs should address how to deal with non-forest data gaps and how this fits in with using non-forest data with vegetation maps.
13. Temporal aspect needs to be considered in the design of the inventory and subsequent compilation, in conjunction with considering the vintage of the layers for stratification.
14. Site productivity and ecological gradients need to be addressed within the stratification criteria.
15. Data collection - need to consult with each region on how their data is collected and stored.
   Discussion of DATIM for “FIA Data Mart” and how the various modules of DATIM allow for the linkage of inventories.
16. Develop matrix with sample-based data and what the appropriate uses of the data are.

17. Discussion of finer-scale inventories and monitoring efforts and how these datasets could with existing vegetation data. Contrast with mid-level inventories (rangeland transects, etc.; what are the appropriate uses.

18. Describe how inventories can fit within the context of vegetation classification.

19. References include FIA regional field manuals; CSE manual; DATIM Guide; FIA “Green Book”, Rangeland Handbook

**Proposed Membership:** Carlos Ramirez, Ken Brewer, Jim Gerleman, Renata Bush, Jim Alegria, Ralph Warbington, Scott, Christiansen, FMSC – CSE (Sleavin), Tom DeMeo

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**B. Map Accuracy/Utility Working Group**

**Scope:** As specified in the existing vegetation technical guide revision charter (Tier 2) and emphasized by participants in the 2007 Classification, Mapping & Inventory Workshop, a review and revision of map accuracy standards and protocols is a necessary component of next version of the Technical guide and potentially Manual and Handbook direction. A working group has been functionally identified to address key map quality issues and develop recommendations to the revision core team. The fundamental focus of this working group is to make recommendations for enhancing the content of the technical guide to include a more comprehensive discussion of map quality, including quantitative map accuracy assessment and qualitative map utility assessment. The following elements have been identified as a framework for the scope of the map accuracy working group:

1. Review current accuracy requirements and objectives, within the existing tech guide, and make recommendations on the need/level for accuracy standards
   a. OGC/data quality act/case law
   b. Policy vs. Guidance
2. Describe a framework for users to understand risk and uncertainty associated with map products for a specific analysis objective
   a. Information on uncertainty due to sample design, sample size, etc.
   b. Information on map feature (polygon) accuracy and/or quality (include the min. size)
   c. Evaluate map detail and map accuracy
   d. Resource information products matrix (Chip Scott.....& link to “planning section”)
3. Recommend appropriate quantitative approaches and information products for accuracy assessment
   a. Sample design/size for valid accuracy assessment
   b. Report products and formats (e.g., error matrix, fuzzy matrix....
4. Recommend approaches for qualitative assessment of map quality and utility
5. Recommend approaches to quantifying and qualifying map utility at various geographic scales
   a. i.e. tabular comparisons of map and inventory map unit proportions, histograms, etc.

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1 Highlighted names are confirmed members with consent of supervisors to participate.
6. Recommend approaches to describing map unit composition subsequent to mapping
7. Review current spatial accuracy standards and make recommendations on adjustments if necessary (FGDC / USGS standards)
8. Recommend approaches to communicate map quality information to users
   a. Pre-map expectations
   b. Post-map interpretation of map quality information

Proposed Membership: Andy Lister, Kevin Megown, Rachael Riemann, Dave Tart, Mike Walterman, Dave Vanderzanden, Tom Mellon

Recommended working group skill sets: Sample design expertise, Understanding of statistics relative to AA, Experience and knowledge of map product production and use, Technology transfer experience

C. Map Unit and Feature Design Working Group

Scope: Revise sections of the guide dealing with the decision process associated with map unit design and related offshoots. There are a few short sections of the guide, mostly within 3.2.3 (page 3-18), dealing with this. There are also several dependencies scattered throughout the guide, including accuracy assessment, user needs assessments, and business needs identification. Group work will involve identifying relevant portions of the guide and either verifying adequacy, reorganizing, and, where needed, rewriting short sections to deal with these issues. We do not anticipate major rewrites, but rather some reorganization, cross referencing, and some short additions of guidance and maybe the addition of a decision process flow chart.

Process notes

1. Create an elaborated (more direction/guidance) process with which to conduct the information needs assessment process
2. Design a series of questions similar to a “decision flow chart” for helping guide the thought process
   o specifics about map unit design (mmu², pixel size, scale [page 1-12]) will be tied to this flow chart
   o consider basing it in part on an existing decision flow chart that came out of a FHTET workshop (http://www.fs.fed.us/foresthealth/technology/pdfs/RiskMappingWorkshop.pdf - see page 11 of this .pdf)
3. Group will go through guide and identify all areas that deal with needs assessment and subsequent map unit design and attempt to align them, either by deleting/aggregating/moving/etc.
4. Tie accuracy measure to the needs assessment – e.g., if the map purpose is basically a graphic, this requires different accuracy than a map on which areas of pixels will be added up
5. Verify that the level of appropriateness is appropriate for the “appropriate use” of the map (given the needs assessment and map unit design)

² Minimum map feature is preferred over minimum map unit.
6. Explore idea of adding section on conducting a cost/benefit assessment of map unit design/decision making process; the point is to look at how to structure an economic efficiency analysis

7. Add a section on pixels vs. polygons – when each would be appropriate – for mapping, and/or display (e.g., don’t want to misrepresent the map by showing pixels, which might give a false impression of appropriate use; “grain size” concept)

8. Consider a section on recommendations for required training data sample sizes, collection and distribution strategies

9. Consider the issue: how does map unit design and choices affect aggregation (upsampling and cross-regional integration) of maps?

10. Look into existing sections of tech guide that deal with map feature design

11. Continuous vs. categorical attribute issue
   - Need to couple this with the accuracy assessment discussion – different methods for characterizing accuracy of continuous variables.
   - Guidelines for the categorization of continuous variables – e.g., best to keep data continuous until after the analysis – you lose resolution if you classify the continuous variable and then do analysis using classes
   - Give guidance for mapping continuous attributes – e.g., mapping “likelihood of occurrence” of a category like wildlife habitat
   - Need to figure the continuous/discrete variable choice into the needs assessment decision process – this could be a terminal node in the decision tree

Proposed Membership: **Wendy Goetz, Carlos Ramirez, Andy Lister, Jim Ellenwood, Mark Riley, Tom Mellon** or Jack Tripke, Mike Shanta, Jason Drake, Rob Develice

D. Map Maintenance Working Group

**Scope:** Maps need to be updated and corrected because of the dynamic nature of landscapes and thematic errors that occur in all mapping efforts. The fundamental concepts, including planning and implementation need to be outlined

1. Information gathering
   - Review business needs documentation
   - Review map updating documentation
     - List of techniques and references
   - Assemble updating methodology currently being implemented by the various Regional Offices - interview geospatial specialist and ecologist
   - Investigate change management principles
   - Where should updating efforts be focused?

2. Define what map maintenance is.
   - Are there different methods for mapping vs. updating vs. refreshing? What are the techniques?
   - Identify the types of updates.
   - Refine the update schedule/recommendations – target updates
3. Outline the project workflow.
   o Planning
     - Outline the planning phase? Include information on coordination and personnel, how to prioritize forest needs, identify potential data sources, and factoring in time and budget constraints.
     - Has there been a change in technology that makes it possible to improve a particular vegetation class?
     - Has there been a change in mapping standards
   o Implementation
     - How to assess the current maps
     - Examples of the various techniques
     - Effective method to distribute the new maps
     - Updating metadata

4. Accuracy Assessment – how does updates impact the original accuracy assessment

   Proposed Membership: Kevin Megown, Tom M. Pete J., Sanford Moss, Dave Vanderzanden, Wendy Goetz, David Meriwether, Melinda Mouer, Carol Apple, Gretchen Moisen,

E. Business Needs Validation Working Group

Scope: Review and validate current and emerging agency business needs for each level; National, Broad, Mid- and Base Levels. Do these needs require revisions in the technical guide?

1. Locate documents that describe business needs to emerging issues of Climate change, carbon stock / carbon flux, all land initiative (Dept of Ag.), watershed condition assessments, LANDFIRE - fire risk and behavior for all lands, Monitoring Trends in Land Change, ecological site description development interagency agreements, update process the NLCD and LANDFIRE
2. Interview WO Program Managers (Greg or Patrice, Tom, state and private, Dave Hohler, Mike Barrowcliffe, John Calvert....Linda will track others) to check for validate and or provide additions to the emerging issues list, and point to contact, documentation or reference materials for identification of business needs related to issue. (see notes from Project Overview and Schedule Section of these notes)
3. Check with working group on the rangeland – wildlife habitat monitoring – Riparian Veg monitoring - GDE – handbook/s on any needs identified for existing vegetation classification, mapping or inventory.
4. Identify the appropriate scale of classification, mapping and inventory for new business needs.
5. Validate that the current standards and protocols meet the emerging issue needs for existing vegetation CMI.
6. Recommendation for changes needed to existing vegetation CMI for meeting new needs.

   Proposed Membership: Ralph Warbington, Patrice Janiga, Linda Spencer, Dave Cleland, Jim Gerleman, R10 Line Officer
Working Group should be comprised of members familiar with classification, mapping and inventory.

F. Non-Forest Information Gaps

Core Team will develop a Policy Issue Briefing Paper on this topic to forward to the Steering Team with proposed discussion with the SLMBOD. The Core Team agreed to use Renate Bush’s paper and other papers addressing this issue as a foundation.

G. Continuous Variable vs. Categorical Variable

This issue was merged with the Map Design Working Group’s scope.

Next Steps and Wrap-Up

Linkages between two other ongoing efforts were discussed during several segments of the meeting. These include the Standard Data Management (SDM) project and the Design and Analysis Tool for Inventory and Monitoring (DATIM). Core Team members and Steering Team members familiar with these efforts should look for opportunities to link these efforts to the Existing Vegetation TG revision effort.

Steve Solem reviewed the scope of Tier 1 and Tier 2 and schedule for activities and tasks. The schedule for Tier 1 revisions may need to be adjusted to accommodate decisions resulting from the ESA vegetation panel discussions in August.

9/23 @ 1:00 EDT - Core Team Conference Call

Objective is to review v1.0 of Tier 1 revisions. Core Team member comments will be submitted by 9/15 so they can be summarized and recommendations developed for consideration by the Core Team. Recommendations will then be reviewed by the Steering Team during their October conference call.

11/15-19 Core Team Meeting (Location to be determined)

Objectives are to (1) review final edits to Tier 1 v2.0 before publication and (2) an initial review of Tier 2 v1.0 proposed revisions from the working groups. Core Team member comments will be submitted by 11/1 to so they can be summarized and recommendations developed for consideration by the Core Team. The final version of Tier 1 v2.0 will be reviewed by the Steering Team in early December along with recommendations for changes to Tier 2 v1.0.

Core Team members are reminded of their role in providing a linkage to their community of practice and organization. Comments on draft materials circulated to these groups should not be routed to the Core Team leader for consideration, but reviewed and evaluated by the Core Team member that requested review. Opportunity for formal review and comment is provided in Task 4.40 which includes a 60-90 day review process which will be initiated by a “reply requested” request via the FS correspondence database and will be signed by the Deputy Chief for NFS.

The Existing Vegetation Technical Guide webpage is up and running. The site’s URL is:

http://www.fs.fed.us/emc/ rig/ protocols/ vegclassmapinv.shtml
The Core Team also has access to a conference line and WebEx account for conducting conference calls and meetings.

**Improvements in Next Meeting/Conference Calls**

The Core Team suggested the following be considered during future calls/meetings:

- Use of Voice over Internet (VOP) vs. a conference line
- Issues with VPN going down and WebEx not being available. Need to have a back-up plan for distributing documents/materials before discussions to remote participants
- Consider a FTP or Website as a way to distribute materials vs. depending on WebEx alone
- Make sure someone is designated as a Same Time contact or other link to remote participants in case WebEx or the Conference Line go down