Site Evaluation and Recommendation Reports for Equestrian and Small Livestock Facilities
# Overview of Agenda

**DAY 2**  
**Friday**  
**February 3, 2012**  

**Technical Site Evaluation Training**  
for Horse and Small Livestock Facilities  
With the Natural Resources Conservation Service  

*Morning Classroom Session at Ecology Action & Afternoon Field Session (transportation provided)*

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 a.m. - 8:00 a.m.</td>
<td>Sign In/Continental Breakfast</td>
</tr>
<tr>
<td>8:00 a.m. - 8:30 a.m.</td>
<td>Welcome/Introduction</td>
</tr>
<tr>
<td>8:30 a.m. - 10:20 a.m.</td>
<td>Site Evaluation Overview</td>
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<tr>
<td><strong>10:20 a.m. - 10:30 a.m.</strong></td>
<td><strong>BREAK</strong></td>
</tr>
<tr>
<td>10:30 a.m. - 11:00 a.m.</td>
<td>Travel to Site #1</td>
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<tr>
<td>11:00 a.m. - 12:00 p.m.</td>
<td>Site Evaluation #1 (Scotts Valley)</td>
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<tr>
<td><strong>12:00 p.m. - 1:00 p.m.</strong></td>
<td><strong>LUNCH (provided)</strong></td>
</tr>
<tr>
<td>1:00 p.m. - 1:30 p.m.</td>
<td>Travel to Site #2</td>
</tr>
<tr>
<td>1:30 p.m. - 2:30 p.m.</td>
<td>Site Evaluation #2 (Ben Lomond)</td>
</tr>
<tr>
<td>2:30 p.m. - 3:00 p.m.</td>
<td>Travel back to Ecology Action</td>
</tr>
<tr>
<td><strong>3:00 p.m. - 3:10 p.m.</strong></td>
<td><strong>BREAK</strong></td>
</tr>
<tr>
<td>3:10 p.m. - 3:30 p.m.</td>
<td>Evaluation/Closing</td>
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</tbody>
</table>
Susan Hoey Lees, NRCS
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Goals for the Day

• To enable program implementers to complete a basic site evaluation for typical Livestock and Land participant facilities.

• To identify qualifications needed from technical advisors to complete more comprehensive and detailed site evaluations and empowered to identify technical/regional professionals applicable to program needs.

• To establish additional steps needed for program implementers to move beyond basic site evaluations.
Five Simple Steps to Successful Site Evaluations

Step 1: Developing Interest

Step 2: Pre-Site Visit Preparation

Step 3: Site Visit

Step 4: Processing & Recommendation Development

Step 5: Deliverable to Land Owner
STEP 1:
Developing Interest
How are site visits generated?
• Confidentiality
• Building Trust
• Voluntary
• What is the RCD/NRCS role in a site visit?
• Do both need to attend?
What if I don’t have an NRCS person that can do site visits?

- RCD past recommendation reports have included
  - Soil maps (web soil survey)
  - Rainfall (NOAA or NRCS)
  - CNDDDB – Endangered species website
  - Template with recommendation

- Certified Professional in Erosion and Soil Control (CPESC)

- Are there other references for horse facility designers?
Target Audience

Rangeland issues v.s. Ranchette issues

Goals vs. specific BMP implementation

(W)holistic management vs. reactive management
What technical background or resources are needed to perform site evaluations?
Purpose of generating a report for landowner
Recommendation Reports

- **Limitation of reports**
  (recommendations vs. actual site design)
  - Example recommendation reports (pgs. 250 – 274)
  - Example site plan
Recommendation Reports

- Basic report example (see handout)
- Detailed report example (pg. 250 - 268)
Recommendation Reports

• What components make a good recommendation report/most helpful to landowners?
  – Supplemental docs
  – Maps
  – List potential funding sources that can help?
    • EQIP, AWIP, DF&G, etc…
STEP 2:
Pre-Site Visit Prep
NRCS 9 Step Planning Process

Identify Problems
Determine Objectives
Inventory Resources
Analyze Resource Data
Formulate Alternatives
Evaluate Alternatives
Make Decisions
Implement Plan
Evaluate Plan

Steps to Conservation Planning Certification

I. On-Site Inventory and Field Visit
II. Analysis and Development of Alternatives
III. Presentation of Alternatives and Client Decision
IV. Documentation in the Conservation Plan Case File

Your reviewer must approve each of these steps.
Pre-site visit Preparation

- Request for Assistance signed form letter (optional)
- Request from RCD to NRCS for assistance and/or site visit
Pre-site visit Preparation

- What information is needed by NRCS or technical resource to start the process
  - APN (Accessor Parcel Number)
  - Physical Address
  - Brief property description (assists finding on map)
  - Significant landmarks (if any)
  - 303-D listing & Listed impairments (if any)
Pre-site visit Preparation

- Soil characteristics – Brief or extended reports
- Maps
  - Average Rainfall
  - Topo maps
  - Property maps
  - Well and surface water locations
  - References/maps to locate possible or existing landslides, faults or other note worthy geologic features.
Pre-site visit Preparation

- Historical records, photos and information pertaining to past and present landuses, disturbances to native vegetation or grading of soil.

- Information regarding any artificial changes, modification in natural drainage, diversion or concentration of runoff on-site or on adjoining, neighboring properties.

- References to locate possible species of concern (plant and animal) CNDDB & Critical Habitat Maps

- Water Quality Site Evaluation & Plan for Horse and Livestock Facilities Self-Assessment Worksheet (optional)
Pre-site visit Preparation

- Scheduling considerations
- Time to complete
- Time for site specific recommendation report v.s. general / basic recommendations report development
STEP 3:
Site Visit
Tools

Pg. 231: List of common tools
Tools

Pg. 231: List of common paperwork
Site Visit Considerations

- Questions to ask
- Determining landowner goals
  - Helping the landowner express their goals

Be open-minded and NON-JUDGEMENTAL!!!!

You are a guest on their land!!!

Always tell the landowner “Thank you for having us out.”

Always find something positive to say about the property or facility!!!

“Tell me about your long term goals….”

“What are your dreams for….”
Guiding and working with landowners

Low tech vs. High tech solutions

Differences in priorities
Site Visit Considerations

• On-site checklist
• What to look for?
  ...access roads
  ...hard surfaces & roofs
  ...septic system locations
  ...Water systems & Water Wells

Looking at the Surrounding Context:
- Are slopes steeper or flatter than expected?
- Is predominate vegetation as.....
- Are you seeing signs of unexpected land shifting?
Site Visit Considerations

- Site Inventory
Examples:
Site Evaluation Tools & Forms
Examples:
Site Evaluation Tools & Forms

CPA-52
Site Visit Considerations

Best Management Practices
(short list)

- Manure Management
- Paddock Improvements
- Improvements to reduce run-off and erosion
- Installed Gutters and/or Drains
- Seeded Pasture
- Pasture Rotation Practices
- Created a Sacrifice area
- Began composting
- Improved footing
- Reduced the number of horses
Site Visit Considerations

• How to wrap up site visit with owner
  – Rec report how many days post visit?
  – Follow-up phone call?
Site Visit Considerations

- Difference in site visit approach for horses vs. cattle vs. other livestock?
  - What to take into account

- Case studies – livestock facilities other than horses

- Small Dairy Operations

- Sheep/Goat/Lama owners attended our workshops
Programmatic Option
Load Reduction Modeling

• Input Data
  – Light blue cells
  – Drop down menus
  – Facility Information
  – Management Areas
  – Equestrian Best Management Practices
  – Treatment Best Management Practices

• Output Data
  – Summarizes Present and Proposed Annual Loads

• Summary Printout
Facility Information

- Quantity of Horses
- Size of Facility (acres)
- Precipitation
- Facility/Storage Distance from Creek (ft)
Precipitation

Figure 1. Precipitation (inches) 2 year - 6 hour isoplevials for Santa Cruz County.
Management Areas

- Area (in square feet)
- Soil Type
  - Fine sand
  - Very fine sand
  - Loamy sand
  - Sandy loam
  - Very fine sandy loam
  - Silt loam
  - Clay loam
  - Silty clay loam
  - Silty clay
  - Compacted base

- Organic Matter
  - <1%
  - 2%
  - 4%

- Slope (%)

- Type of Cover
  - None
  - Native Vegetation
  - Grasses
### Management Areas

<table>
<thead>
<tr>
<th>Management Areas</th>
<th>Present</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stable/Covered Stalls or Roofed Areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>ft²</td>
<td>ft²</td>
</tr>
<tr>
<td><strong>Pastures/Non-hardened Turnouts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>ft²</td>
<td>ft²</td>
</tr>
<tr>
<td>Soil Type</td>
<td>Fine sand</td>
<td>Fine sand</td>
</tr>
<tr>
<td>Organic Matter</td>
<td>&lt;0.5 %</td>
<td>&lt;0.5 %</td>
</tr>
<tr>
<td>Slope</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Type of Cover</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Soil Loss</td>
<td>0.00 tons/year</td>
<td>0.00 tons/year</td>
</tr>
<tr>
<td><strong>Paddock/Hardened Turnout Areas and Pens</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>ft²</td>
<td>ft²</td>
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<tr>
<td>Soil Loss</td>
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<td>0.00 tons/year</td>
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</tbody>
</table>
Equestrian Facility BMPs

- Manure Management
- Exclusionary Fencing
- Pasture Management
- Drainage Controls
# Treatment Control BMPs

<table>
<thead>
<tr>
<th>Removal Efficiencies</th>
<th>Total Nitrogen</th>
<th>Total Phosphorus</th>
<th>Total Streptococcus</th>
<th>Fecal Coliform</th>
<th>Sediment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>46%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>59%</td>
</tr>
<tr>
<td>Filter Strip</td>
<td>15%</td>
<td>-52%</td>
<td>71%</td>
<td>83%</td>
<td>74%</td>
</tr>
<tr>
<td>Vegetated Swale</td>
<td>73%</td>
<td>38%</td>
<td>0%</td>
<td>0%</td>
<td>80%</td>
</tr>
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</table>
Predictive Analysis Output

- Present and Proposed Annual Loads
- Percent Effectiveness
- Use of Model Output

<table>
<thead>
<tr>
<th>Annual Loads</th>
<th>Present</th>
<th>Proposed</th>
<th>% Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manure</td>
<td>0.00 tons</td>
<td>0.00 tons</td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Nutrients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>0.00 lbs</td>
<td>0.00 lbs</td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>0.00 lbs</td>
<td>0.00 lbs</td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Pathogens</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Streptococcus</td>
<td>0.00E+00 colonies</td>
<td>0.00E+00 colonies</td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Fecal Coliform</td>
<td>0.00E+00 colonies</td>
<td>0.00E+00 colonies</td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Sediment</td>
<td>0.00 tons</td>
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User Guide

- Constituents of Concern
- Equestrian Facility and Treatment Management Practices
- Model Results
- Selected Demonstration Sites
Programmatic Option

- Collecting data in the field
- Determining cost effectiveness for BMP and value to environment
Ranking criteria:

- Participant feedback: what has worked in other programs?
- What have been criteria considered for L&L?
- How to improve?
Programmatic Option

- Before and After
- Disseminating information to landowner:
  - In recommendation reports
  - In person
STEP 4: Processing & Recommendation Development
Processing

- Processing data collected at Site Visit – download points from GPS units
- Writing Report

13. Manure Bunker system options; one that can be built on site or a smaller, portable manufactured system were discussed with you and various locations were discussed as well (see map). Each location had pro’s and con’s associated with it.
   - Where existing equipment is near residence:
     - Pro’s:
       - hard surfaces exist
       - no additional grading required
       - level area, easy of working with equipment around facility
     - Con’s:
       - Vicinity to water well, if leachate escaped hard surfaces water well could be at risk
       - Farthest away from source of manure
       - Uphill from manure sources
       - Relocation of equipment and materials from this area required
   - Above Barn in nearly level area:
     - Pro’s:
       - Little to minimal grading required for bunker system
       - Adjacent to greatest source of manure (stalls)
     - Con’s:
       - Additional grading or surfacing from driveway to facility required
       - Slope of driveway at this location may be a concern
       - Uphill from manure sources
   - Below Barn in nearly level area:
     - Pro’s:
       - Little to minimal grading required for bunker system
       - Adjacent to greatest source of manure (stalls)
       - Downhill from manure sources
       - Minimal surfacing from driveway to facility required
       - Driveway slope minimal at this location
     - Con’s:
       - Adjacent to neighbor access point
       - Closer to property lowpoint
       - Leachate, if escaped, could have significant impact to adjacent waterway
Recommendation Development

- EVegGuide Recommendations
- Maps & Data
  - Brief Soil Descriptions
  - Soils Inventory Report – NRCS Produced
- Text Portion of Report
STEP 5:
Deliverable to Land Owner
RCD Processing of Report to Owner

- Hand-deliver report to Landowner
- Deliver via Snail-mail (USPS)
- Meet with Landowner in office and explain report
Five Simple Steps to Successful Site Evaluations

Step 1: Developing Interest

Step 2: Pre-Site Visit Prep

Step 3: Site Visit

Step 4: Processing & Recommendation Development

Step 5: Deliverable to Land Owner
Qualifications Needed:

Now that you know what goes into creating a report, what sort of qualifications do you feel are necessary to produce a basic site evaluation?
Putting Lecture to Practice
Site #1 Before Pics – See Handout