### OJT Training Module Cover Sheet

**Title:** 1008 Soil Salinity– understand the what, where, and how of salinity development.

**Type:** □ Skill  □ Knowledge  **X** Knowledge

**Performance Objective:** Trainee will be able to...
- Understand what is a saline soil.
- Recognize the difference between a saline area vs. saline seep.
- Recognize where saline areas and saline seeps normally occur.
- Understand how saline areas and saline seeps develop.

**Target Proficiency:**
- □ Awareness  □ Understanding  □ Perform w/ Supervision  **X** Apply Independently  □ Proficiency, can teach others

**Trainer Preparation:**
Trainer should be familiar with the assigned reading/review material in the lesson plan that follows.

**Special Requirements:**
Initiate an external learning request with a SF-182 in Aglearn for this activity. Instructions and a template are located on the training webpages for OJT modules.

**Prerequisite Modules:**
- □ 1104 How to identify landscapes, landforms, and surface morphometry– overview.

**Notes:**
None

**Authors:**
Kent E. Cooley

**Approved by:**
Marc Crouch  
Craig Ditzler
The Five-Step OJT Cycle for **Declarative Training**
(Knowledge)

**Cycle Step 5**
Trainer/Trainee debrief

**Cycle Step 4**
Trainer observes
Trainee perform
Task provided as
feedback

**Cycle Step 3**
Trainer and Trainee discuss information

**Cycle Step 2**
Trainee reviews materials provided

**Cycle Step 1**
Trainer/Trainee establish shared mental model
# OJT Module Lesson

## Title: 1008 Soil Salinity – understand the what, where, and how of salinity development.

<table>
<thead>
<tr>
<th>WHAT</th>
<th>WHY, WHEN, WHERE, HOW, SAFETY, QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>First of three related soil salinity modules to be completed together.</td>
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### Cycle step 1

**Review objectives and locate references used as job aids for this module.**

### Cycle step 2

**Trainer and trainee should access via the internet and read/review:**

1. **Soil Quality Publications:**
   - Soil Quality Technical Notes
   - Resource Concerns
   - Salinization

2. **Soil Quality Test Kit Guide:**
   - Electrical Conductivity


### Cycle step 3

**Do the following:**

1. **Understand what a saline soil is.**
   - Define:
     - salinization (see reference 1),
     - electrical conductivity (see reference 2 p.59),
     - saline soil (EC > 4 dS/m, types of salts).
   - Discuss the difference between saline seep, discharge saline area, and saline-sodic area. (see references 1,3).

2. **Understand where and how saline areas form.**
   - Classroom exercise –
     - Identify key hillslope positions where saline areas form (review saline seep development diagrams (see reference 4); discuss management practices that promote development of saline areas (overgrazing, fallow in crop rotations, etc.).

### Cycle steps 4 and 5

**Instructor should summarize what has been learned and lead into the next related module.**
OJT Module Lesson Measurement of Learning

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<th>WHAT</th>
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<tr>
<td>Quiz</td>
<td>Complete the quiz below</td>
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**SF-182**

Trainee and/or supervisor access Aglearn to verify completion of the module via its SF-182.
Quiz

1. Which one or more of the following are processes that affect the soil-water balance which may affect the movement and accumulation of salts in the soil
   a. hydrology
   b. climate
   c. irrigation
   d. drainage
   e. plant cover and rooting characteristics
   f. farming practices

2. Which 2 or more of the following are conditions that present together cause salinization?
   a. the presence of soluble salts, such as sulfates of sodium, calcium, and magnesium in the soil
   b. a high water table
   c. a high rate of evaporation
   d. low annual rainfall

3. Which 3 of the following are early signs of salinization?
   a. increased soil wetness in semiarid and arid areas to the point that the soil does not support equipment
   b. white spots and streaks in the soil, even where no surface crusting is visible
   c. irregular patterns of crop growth and lack of plant vigor
   d. white crusting on the surface
   e. a broken ring pattern of salts adjacent to a body of water
   f. the growth of salt-tolerant weeds
   g. the presence of naturally growing, salt-tolerant vegetation

4. Which 4 of the following are advanced signs of salinization?
   a. increased soil wetness in semiarid and arid areas to the point that the soil does not support equipment
   b. white spots and streaks in the soil, even where no surface crusting is visible
   c. irregular patterns of crop growth and lack of plant vigor
   d. white crusting on the surface
   e. a broken ring pattern of salts adjacent to a body of water
   f. the growth of salt-tolerant weeds
   g. the presence of naturally growing, salt-tolerant vegetation

5. Irrigation to maintain salts at a level below the root zone in the soil is an accepted recharge management effort.
   a. True
   b. False

6. Reducing deep tillage is an accepted discharge management effort.
   a. True
   b. False
7. Alfalfa is a salt “tolerant” crop.
   a. True
   b. False

8. Saline seeps are most common south and west of the Missouri River.
   a. True
   b. False

9. Sandy and gravelly soils that can function as recharge areas for upslope from saline seeps can be located using soil survey information.
   a. True
   b. False