

## OJT Training Module Cover Sheet

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

**Type:**      Skill      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  
 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:**

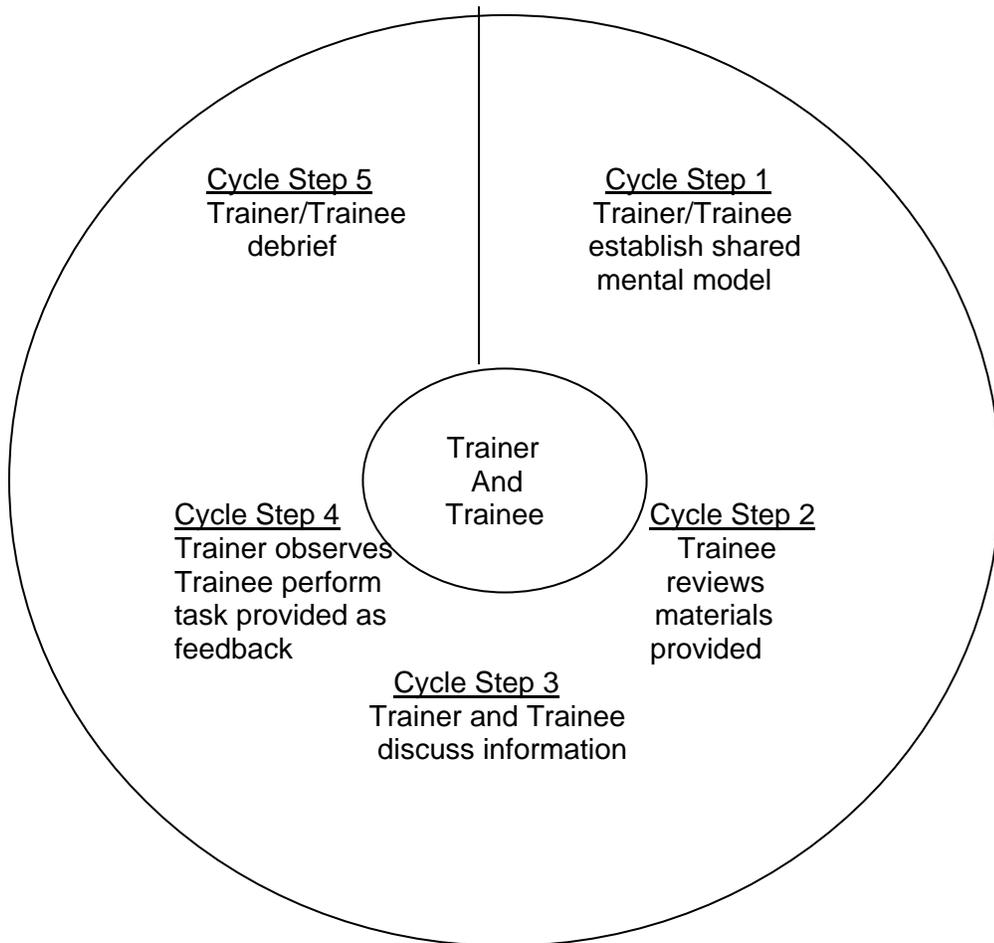
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# The Five-Step OJT Cycle for Declarative Training (Knowledge)



## OJT Module Lesson

<b>Title: 1008 Soil Salinity – understand the what, where, and how of salinity development.</b>	
<b>WHAT</b>	<b>WHY, WHEN, WHERE, HOW, SAFETY, QUALITY</b>
First of three related soil salinity modules to be completed together.	
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: <ul style="list-style-type: none"> <li>• <sup>1</sup> <b>Soil Quality Publications:</b> <ul style="list-style-type: none"> <li>○ Soil Quality Technical Notes               <ul style="list-style-type: none"> <li>▪ Resource Concerns                   <ul style="list-style-type: none"> <li>• <b>Salinization</b></li> </ul> </li> </ul> </li> </ul> </li> <li>• <sup>2</sup> <b>Soil Quality Test Kit Guide:</b> <ul style="list-style-type: none"> <li>○ <b>Electrical Conductivity.</b></li> </ul> </li> <li>• <sup>3</sup> <b>Plant Materials for Salt-Affected Sites in the Northern Great Plains.</b> USDA, NRCS publications, Bismarck, ND. March 2007. 8p. (ID# 7094).</li> <li>• <sup>4</sup> <b>Saline Seep Diagnosis, Control, and Reclamation,</b> USDA ARS publications, Conservation Research Report Number 30, 1982.</li> </ul>
Cycle step 3	Do the following:
1. Understand what a saline soil is.	Define: <ul style="list-style-type: none"> <li>• salinization (see reference <sup>1</sup>),</li> <li>• electrical conductivity (see reference <sup>2</sup> p.59),</li> <li>• saline soil (EC &gt; 4 dS/m, types of salts).</li> </ul> <p>Discuss the difference between saline seep, discharge saline area, and saline-sodic area. (see references <sup>1,3</sup>).</p>
2. Understand where and how saline areas form.	Classroom exercise – <ul style="list-style-type: none"> <li>• Identify key hillslope positions where saline areas form (review saline seep development diagrams (see reference <sup>4</sup>);</li> <li>• discuss management practices that promote development of saline areas (overgrazing, fallow in crop rotations, etc.).</li> </ul>
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**

<b>Title: 1008 Soil Salinity – understand the what, where, and how of salinity development</b>	
<b>WHAT</b>	<b>WHY, WHEN, WHERE, HOW, SAFETY, QUALITY</b>
Quiz	Complete the quiz below

### ***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