

**Objectives and Test Questions for the Presentation by Matt Gause on  
“Biotic Processes – Vernal Pool Case Study”**

**Objective #1** – Learn the definition of a vernal pool.

**Objective #2** - Understand the abiotic and biotic elements of a vernal pool.

**Objective #3** – Understand vernal pool monitoring and performance standards.

**Five test questions**

1. Which is the most accurate definition of a vernal pool?
  - A. Vernal pools are seasonally flooded landscape depressions where water ponds because of limitations to surface and subsurface drainage.
  - B. Vernal pools are depressional wetlands that are flooded during the summer and fall.
  - C. Vernal pools are wetlands formed by glaciated depressions on the landscape and are wet all year round.
  - D. Vernal pools are wetlands that are fed by groundwater that seeps to the surface.
  - E. Vernal pools are tidal wetlands that have water levels responsive to tidal fluctuations.

**Answer:** A

2. Which of the following are characteristics of vernal pools? (select all that apply)
  - A. The soil surface horizon is often composed of clay loam or clay.
  - B. Vernal pools go through three hydrologic phases: initial inundation, undulating inundation and drying.
  - C. Soil chemistry can have a broad range from acidic to alkaline.
  - D. They have highly specialized endemic flora.
  - E. They provide critical habitat for generalistic fauna.

**Answer:** A, B, C and D

3. Which of the following statements is true?
  - A. All vernal pools are alike.
  - B. Vernal pools are only found in California.
  - C. Agriculture has been the biggest cause of vernal pool loss in California over the past twenty years.
  - D. Floral rings around vernal pools in California are caused by nutrient overloads from surrounding agricultural practices.
  - E. Vernal pool soils are rich in nutrients.

**Answer:** C

4. In California, vernal pool wetted acreage cannot exceed 15% density across the landscape because: (select all that apply)

- A. Federal regulations require it.
- B. Vernal pools exist within a matrix of grassland.
- C. Dietary requirements of fairy shrimp.
- D. Otherwise they remain wet all year round.
- E. It makes it easier to avoid impacts.

***Answer: B***

5. Which of the following statements is false? (select all that apply)
- A. Vernal pool performance standards are universally applicable.
  - B. Total vernal pool acreage across California has increased dramatically in the past 100 years.
  - C. During construction, excavation should be managed to control the thickness of soil over restrictive layers.
  - D. Invasive species cannot survive in vernal pools because of the hardpan soil layers.
  - E. Numerous vernal pool classification schemes have been developed.

***Answer: A, B and D***