Reducing Inputs Tailgate (March 22, 2016)

Creating nesting habitat for raptors increases predation of pests. Wastewater from wineries can be used for irrigation after appropriate treatment.

Mike Best, *Avian Protection Plan Manager*, described Pacific Gas and Electric's efforts to protect birds and prevent outages.

Key points:

- Raptors cause power outages when their wings connect between lines. PG&E retrofits poles when the cause of the outage is caused by a raptor.
- The Owl Safe Project helps informs growers of proper owl nesting box placement and Best Practices.
- Locate nesting boxes on edge of fields close to refuge trees. Do not disturb nesting boxes between February and September. Cleaning nesting boxes between October and December.
- Do not affix nesting boxes to power poles.

Scott Quilty, *Director of Viticulture, Jackson Family Wines- Vineyards of Monterey*, described how the winery and vineyard work together to deliver treated wastewater to the vineyard irrigation system.

Key points:

- Between eight and nine million gallons of water sent from the winery to the treatment ponds.
- Provides 15-20% of irrigation water needs of the vineyards
- Water is tested by in-house lab before being used for irrigation.
- Has not been difficult to do.
- Participation in the Sustainability in Practice (SIP) program can reduce regulatory burden in the area of water quality.

After the indoor presentation were over Mr. Quilty gave a walk around and further description of the wastewater treatment installation on the property.

Mai Ann Healy, *Regional Sales Manager, Biofiltro*, described different methods of treating winery wastewater and their relative advantages and disadvantages.

Key points:

- Winery wastewater is usually too high in salts, nitrogen, and biological oxygen demand (BOD) for use in vineyards. Treatment requires a 94-99% reduction in BOD from winery to field.
- Industrial sewer, septic systems, and "hold and haul" methods do not recapture water and are expensive and often unreliable for winery production great than that of a small winery.
- Aeration ponds are an older technology. They work well, but require a large area, long processing times, and have issues with accumulated sludge and odor.
- Fine bubble air diffusion systems use less energy than aeration ponds, but still have issues with maintenance.
- Membrane bioreactors use a combination of aeration and membrane filtration. Good performance, but expensive to operate.
- Biofiltro's BIDA system uses worms and bacteria as the active part of the water treatment process.
- Onsite treatment of winery wastewater is becoming standard practice due to regulatory water discharge requirements.
- Water recapture is increasingly necessary for economic as well as sustainability reasons.

Fred Seaman and Chris North, *Airstrike Bird Control*, discussed the role raptors play in controlling rodent populations and discouraging other birds from feeding in vineyards.

Key points:

- If the density of prey (gophers) is high enough barn owl nesting boxes can be placed as close together as every 263 feet.
- If you provide nesting habitat (boxes) the barn owls will come. Kestrels will nest in a similar type of box, but prefer it to be set lower (8 feet for kestrels, 12 feet for barn owls).
- With both kestrels and barn owls nesting in the area, kestrels will hunt gophers during the day and barn owls will hunt gophers during the night.
- Place boxes near "refuge trees" so the owl can stop and assess the area for predators like Great Horned Owls before flying.
- Hunting perches (15 ft.) in the vineyard increase the likelihood that raptors of all types will hunt in the vineyard.

The slide shows from the talks can be found here:

- PG&E's Avian Protection Plan (Mike Best)
- Winery Waste Water Usage (Scott Quilty)
- Irrigating with Winery Wastewater (Mai Ann Healy)