Site Assessment:
Turn around, look around
Bruce P. Alber, CF

Celebrating 30 years with Wilbur-Ellis Company
Site Assessment:
Turn around, look around

1. Know your target and objective
2. Choose your tools
3. Apply properly
Plan ahead for each project
Know your target weed and objective

- Just killing weeds or changing plant populations?
  - Bareground weed control?
  - Landscape weed control?
  - Road/highway Median Strip?
  - Pasture/range weed control?
Site assessment

- Soil type
- Water: streams, ponds?
- Neighbors

- Adjacent crops
- Trees
- Landscaping
- Slope
Target weed

* Identify the weed or weeds
  * Species
  * Type: annual, biennial, perennial, brush, tree
  * Root type
  * Germination and growing season
Weed species, type, roots, germination season?
Soils, water drainage
Water issues
Neighbors

David (Day) Owen
a.k.a. Abba Nazariah
- Self-proclaimed worldwide archbishop of the Essene Church of Christ.

Encourages adopting a raw, vegetarian diet
Neighbors
Neighbors

VEGAN FREE-RANGE CHRISTMAS TREES

28th ASH
Neighbors

* Meet your neighbors *before* vegetation management activities
* Listen to their questions and concerns
  * You don’t have to agree, but listen
  * Offer alternatives: landowner will maintain
You can contaminate a neighbor’s crop without any visible damage!

- Your labeled fungicide or insecticide lands on another crop where it is not labelled
- Crop is unsellable: you just bought a crop!
Oregon Wine Growers Association

Concerned about 2,4-D and Crossbow drift & volatization damage

Has asked the ODA to ban some 2,4-D ester formulations

Has asked the ODA to make 2,4-D products Restricted Use

Understand spray drift and volatization when near sensitive crops and sites!
Choose your vegetation management tool:
Integrated Pest Management

- The art of using all methods of pest control in a environmentally safe and economically effective manner.
  - Mechanical
  - Mowing
  - Chemical
  - Biological
Biological Brush Control
Biological control of Scotchbroom
Biological control of Scotchbroom
Hand Cutting
Hazards: Cuts, noise, vibration, exhaust
Turn 400 stems into 4000?
Good timing for alder cutting
Know your weather conditions
Weather parameters for spraying

* **Wind**

* **Precipitation**
  * Before spraying, after spraying
  * Soil moisture (saturated soils?)

* **Temperature**
  * Temperature at the time of spraying
  * Temperature even a day later?

* **Humidity**
  * Affects drying time, spray droplet behavior

* **Inversions**
ODA recording requirements

* Wind direction
* Wind speed
* Temperature
* Time recorded
WIND: the largest factor in spray drift problems

Wind Speed

Zero – 7 mph?

What about your travel speed?

Where does the wind blow your droplets?
Measuring Wind Speed

*Hand held anemometers*
  * Kestrel 3000  $150
    Wind speed, temperature, humidity (+ or -)

* Dwyer Wind Gauge  $10

* LaCrosse anemometer  $50
* How wet is the soil?
  * Soil saturation?
  * Puddles in or near application areas?

* When did it last rain?
  * Foliage spray? How wet is too wet to spray?

* When will it rain again?
  * How much drying time is needed for foliage sprays?
  * Will the rain be so heavy to move soil active herbicides?
Foliar spray: will it just run off?
The most important rain event is the first one after an application.

Will it be a nice, light rain to settle the herbicide into the soil?

Or, will it be a “frog strangler” that creates quick run off?
Temperature influences ...

- Chemical formulations
  - Ester formulations can volatize and move away
  - Amine formulations can dry to a salt crystal

Temperatures influences ...

- Spray droplets can evaporate
  - Get smaller as they fall
  - Can evaporate on the leaf or ground surface
Relative humidity
- Recorded as % from 0 to 100%
- Measured by a hygrometer or a psychrometer

Important in the performance of spray droplets
- Drier air can cause droplets to evaporate as they fall
- Drier air can dry droplets on leaf or soil surfaces
Evaporation of Droplets

Wind

High Relative Humidity
-Low Temperature

Fall Distance

Low Relative Humidity
High Temperature
Inversions
Avoid spraying in an inversion

* The wind speed is low! BUT....

- Small driftable spray droplets can stay concentrated together

- They can move long distances and cause damage target damage
Calibration things to know:

- Sprayer pressure
- Nozzle size
- Droplet size
- Travel speed
- Gallons per acre
- Mixing accuracy
What happened?
What happened?

Over-dosed with a herbicide
How many cups of Velpar do I put in my backpack sprayer?

Variables:

- Sprayer pressure
- Travel speed
- Terrain to walk
- Nozzle design/output
- Swath width
- Adjustable nozzle setting
- Nozzle wear
- Number of nozzles
Spot spray, not calibrated w/soil active herbicide
This calibration & application error got to the desk of the Governor of the State of Oregon!
Slope off of a residual treatment
Powerful residual herbicide effects
Powerful residual herbicides
Final thoughts

- Look professional: wear PPE, clean equipment
- Be professional:
  - Know your target weeds
  - Soils, water issues, neighbors, nearby crops
- Choose your vegetation control tools carefully
  - Mechanical, biological, chemical, or combination
- Apply carefully:
  - Weather factors, good equipment, proper calibration
Knapweed replaced by grass
Thank you!
Comments, questions?

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