



READ THE WEED
with Nicole Masters

What is a weed?



Weeds: doctors of the soil

Read your weeds:

- 1. Quickly protect bare/disturbed soil
- 2. Low organic matter
- 3. Balance minerals
- 4. Microbial imbalances and
- 5. As a safety valve for toxins.

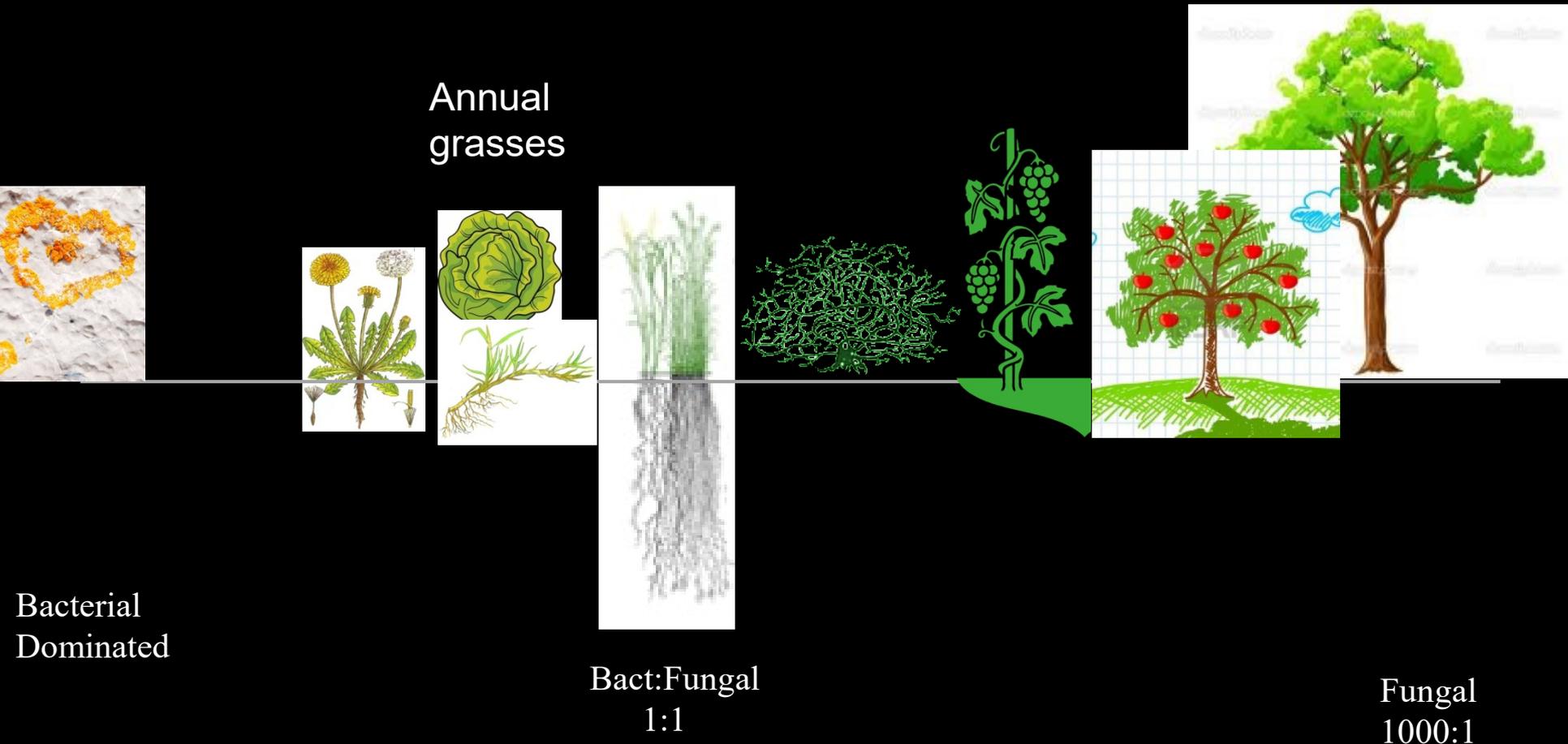


Disturbance events

- Due to natural events or human impacts



Plant: Biology Relationships



Weeds as indicators

- Many weed species are indicating low **available** Ca and low humus
- Foxtail barley grass (primitive grasses): low Ca, nitrates, compaction
- Broadleaf weeds often prefer low P or high K

Low fertility “weeds”

- Wheat grass
- Moss/liverworts
- Rushes
- Onion weed
- Foxtail barley grass
- Bent grass
- Sweet vernal
- Crab grass

What are they indicating?

- Low fertility
- Low P
- Low Ca
- Low fungi
- Low biological activity
- Check structure/compaction
- Overgrazing

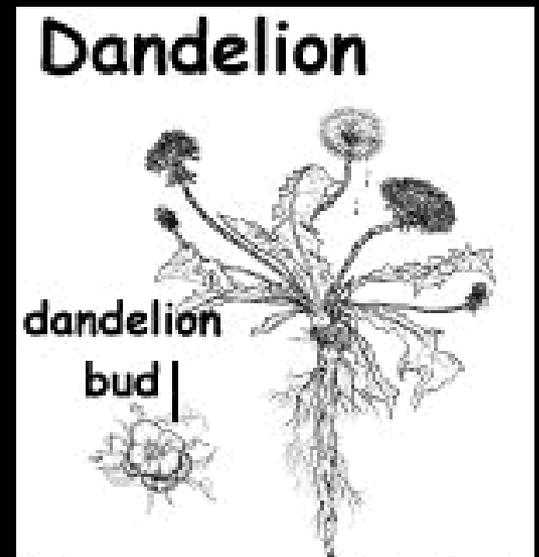


Medium fertility 'weeds'

- Annual ryegrass
- Barnyard grass
- Tall wheat grass
- Red/curled dock
- Tall fescue
- Common burdock (AA)
- May need Ca
- Check for soil compaction/crusting
- Bacterial dominance

High fertility 'weeds'

- Prairie grass
- Cocksfoot
- Dandelions
- Lamb's quarters, pigweed, nettles
- May indicate as before, plus excess of some nutrients, eg Mg, K, N
- Balance Ca:Mg



Weeds of excess

- Amaranthus (pigweed)
- Black Nightshade
- Marshmallow
- Lambsquarters
- Barley Grass
- Stinging nettle



Weeds of excess

- Excess nutrients
- N, K
- Very high biological activity
- Imbalance in N cycle
- Low protozoa
- Low carbohydrates

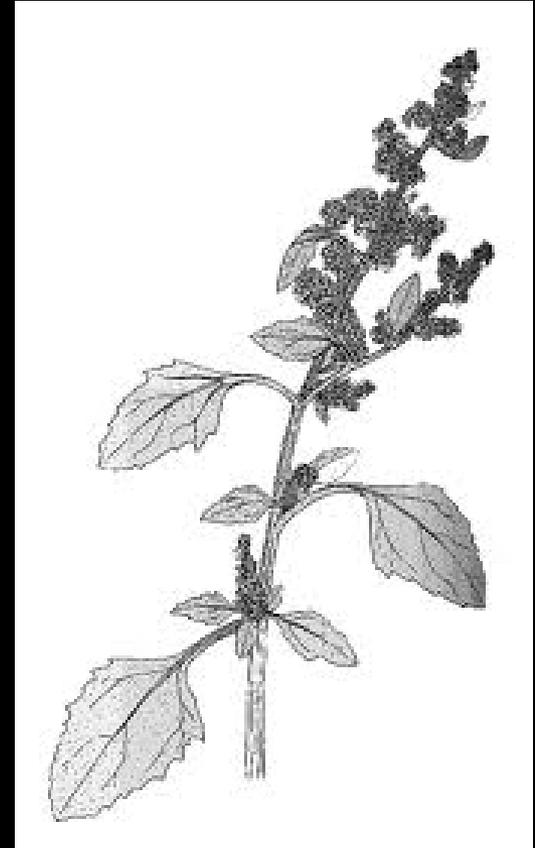


Balance excess weeds

- Balance soil minerals
- Feed fungi
- Humates
- Inoculate with protozoa
- Smaller paddocks- move stock more often, with longer recoveries

Non-mycorrhizal weeds

- Fanweed
- Pigweed
- Lambsquarters
- Sedges and rushes
- Brassica- mustard weed
- Lupin



Release valve weeds

- Kochia
- Knapweed
- Rats tail/barley grass
- Russian thistles



Actions for release valve weeds

- Test pastures with refractometer
- Avoid grazing
- Soil test for possible contamination

- Humates, BioChar, milk, milk thistle

Test your weeds:



<i>Nutrient</i>		<i>Units</i>	<i>Rye</i>	<i>Capeweed</i>
Nitrogen	N	%	2.57	2.18
Phosphorus	P	%	0.21	0.24
Potassium	K	%	2.39	2.30
Sulfur	S	%	0.18	0.18
Carbon	C	%	44.5	42.8
Calcium	Ca	%	0.46	<u>1.43</u>
Magnesium	Mg	%	0.24	0.32
Sodium	Na	%	0.16	<u>1.17</u>
Copper	Cu	mg/kg	6	9

<i>Nutrient</i>		<i>Units</i>	<i>Rye</i>	<i>Capeweed</i>
Zinc	Zn	mg/kg	16	<u>27</u>
Manganese	Mn	mg/kg	47	59
Iron	Fe	mg/kg	60	88
Boron	B	mg/kg	4	<u>39</u>
Molybdenum	Mo	mg/kg	0.5	0.4
Cobalt	Co	mg/kg	<0.1	<0.1
Crude Protein	ratio	%	16.1	13.6
Nitrate	N	mg/kg	62.6	<u>133</u>
Ammonium	N	mg/kg	686	407

					Nettle	Curly
	Rye	Dandelion	Lamb's Qtr	Plantain	Leaf	Dock
Protein	14.00%	25.00%	31.70%	20	26	33
Calcium	0.46%	1.04%	1.10%	1.84	4.4	0.83
Phosphorous	0.21%	0.33%	0.39%	0.26	0.4	0.37
Potassium	2.39%	4.46%	7.66%	2.97	3	3.53
Magnesium	0.24%	0.26%	0.55%	0.17	0.4	0.64
Sodium	0.16			0.011	0	0.020
Sulfur - total	0.18%	0.41%	0.43%	0.53	0.9	0.35
ppm Iron	100	657	91	83	349	111
ppm Copper	6	15	8	12	11	13
ppm Zinc	16	34	46	44	40	38
ppm Manganese	47	35	138	30	36	36
ppm Boron	4	30	44	29	67	31

Soil Health Regeneration

1. Harness sunlight capture
2. Always keep soil covered (armour)
3. Optimal grazing timing/recovery
4. Feed the soil
5. Diversity/diversity/diversity
6. Identify/take action on limiting factors



What signal are you sending to soil?

Weeds I have:

What they're telling me:

Transition tips