Landscaping in Utah for Beginners

WESLEY CRUMP

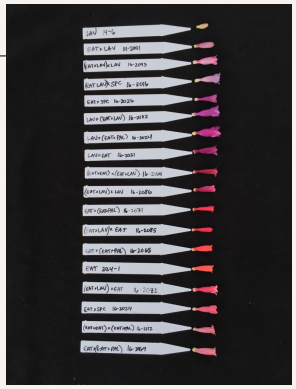
USU EXTENSION HORTICULTURE

WASATCH AND SUMMIT COUNTIES

Photo: Robert Wilson

Who am I?

- USU Extension Faculty
- Wasatch and Summit Counties
- Joined USU Extension ~1 year ago
- Education
  - B.S. Plant Genetics
    - Penstemon hybridization
  - M.S. Horticulture
    - Sweet cherry breeding program
- Post-schooling
  - Indoor agriculture



Who are you?

- Please put in chat if you are:
  - New to Utah
  - New homeowner
  - New to landscaping
  - Just here to learn
  - All the above!

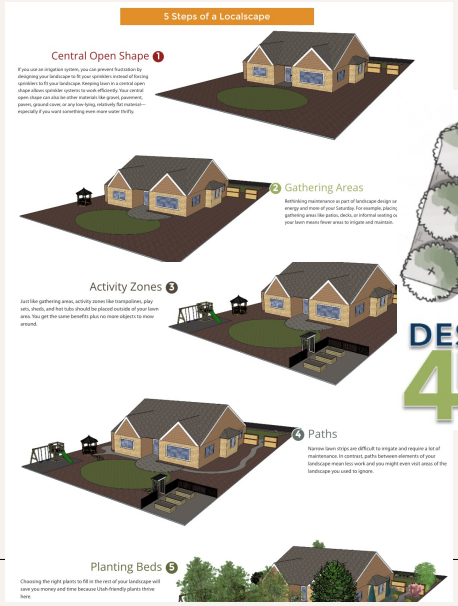
Outline

- This isn't a design class…
- Climate
- Soils
- Water
- Plant selection
- Planting basics
- Resources

Photo: Robert Wilson

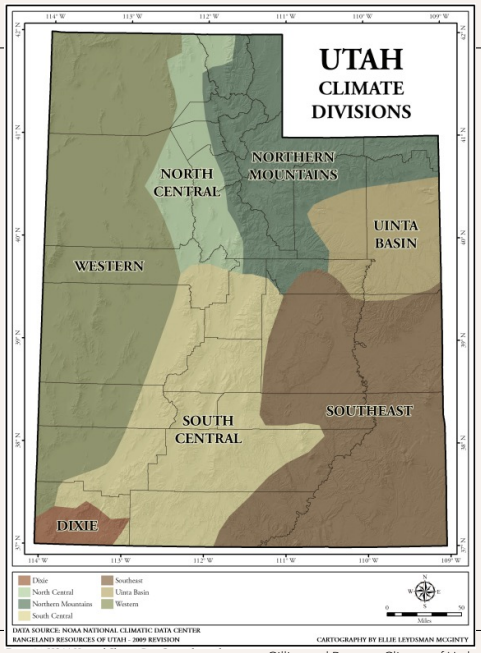
Design resources

- This, unfortunately, is not a landscape *design* course
- But there are great resources!



Climate in Utah

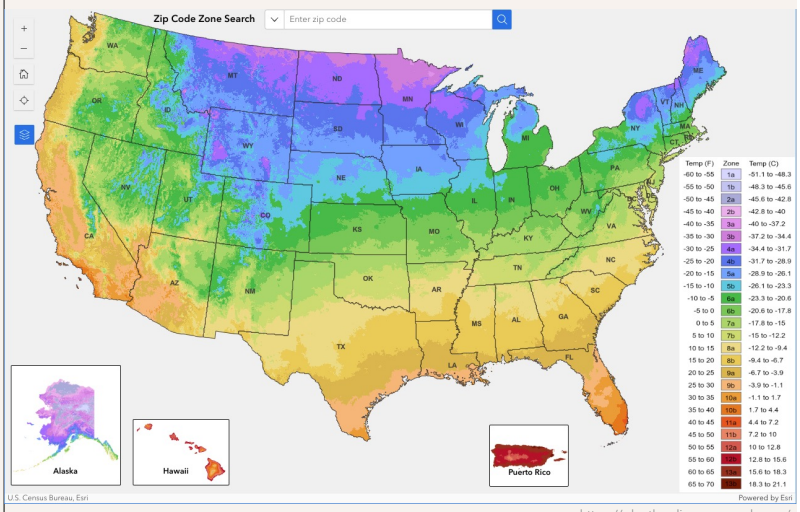
- Several different climates throughout the state – difficult to make sweeping statements
- Characterized by dry, hot summers, cold winters.
- Majority of precipitation comes during winter months
- Spring weather can be unpredictable, variable



Gillies and Ramsey, Climate of Utah

Climate in Utah

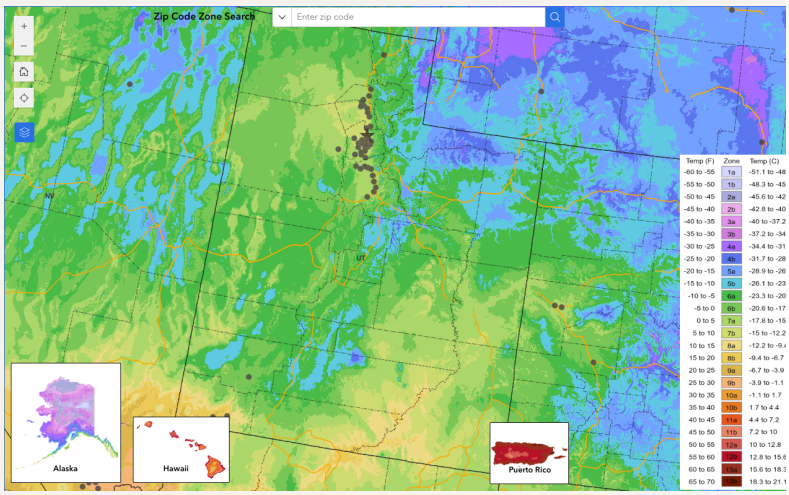
- Hardiness zones
- Revised in 2023
- “Average minimum temperature”



https://planthardiness.ars.usda.gov/

Climate in Utah

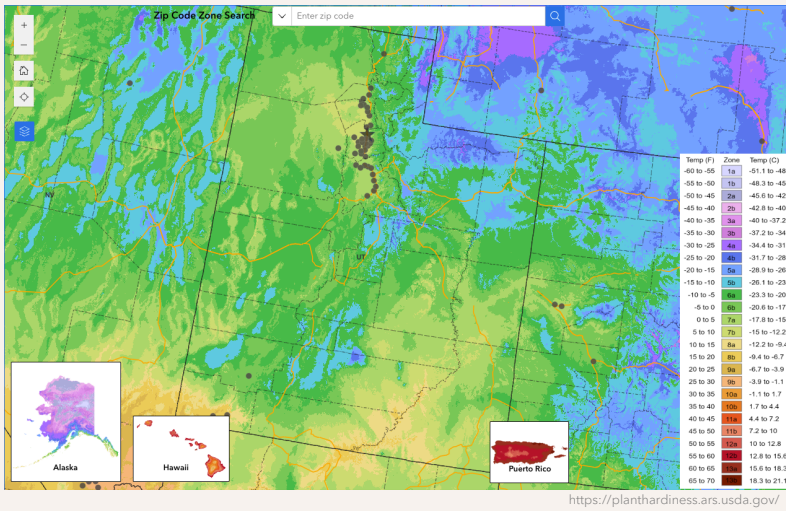
- Hardiness zones
- Revised in 2023
- “Average minimum temperature”
- Scale from 1 to 13
  - 1 is coldest; 13 warmest
  - “a” is colder than ”b” (4a vs 4b)
- Utah County (6a – 7b)
- Salt Lake County (6a – 7b)
- Wasatch County (5b – 6b)
- Washington (6a – 9a)



https://planthardiness.ars.usda.gov/

Climate in Utah

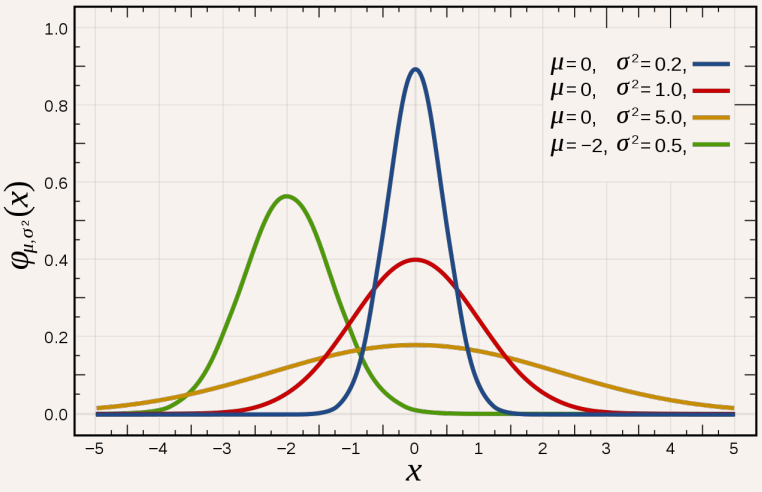
- What does our hardiness rating tell us?
  - "Average minimum temperature"
  - Will the plant make it through the winter?
  - Not relevant for annuals (most vegetables)



https://planthardiness.ars.usda.gov/

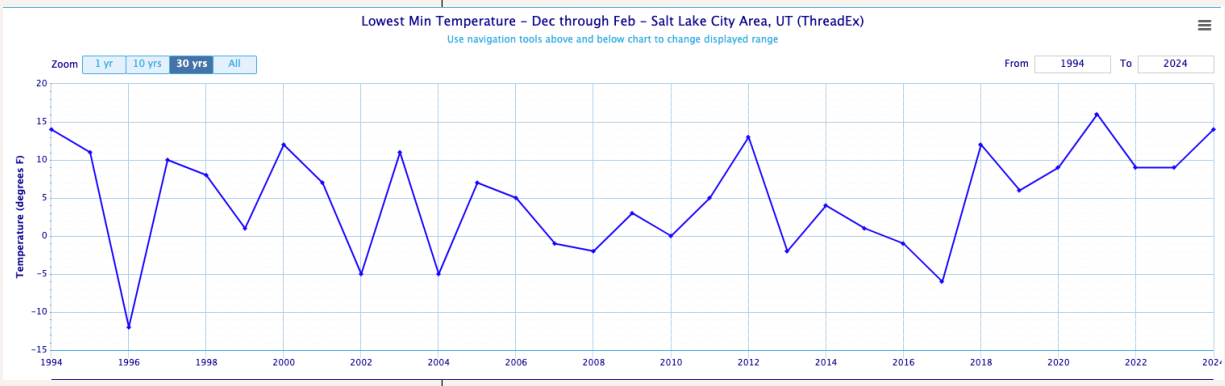
Climate in Utah

- A note on averages
  - Summary statistic – it is not an extreme
  - There will be variation from the average
  - Important consideration for a home gardeners
  - General rule of thumb – the longer lived the plant = the more cautious



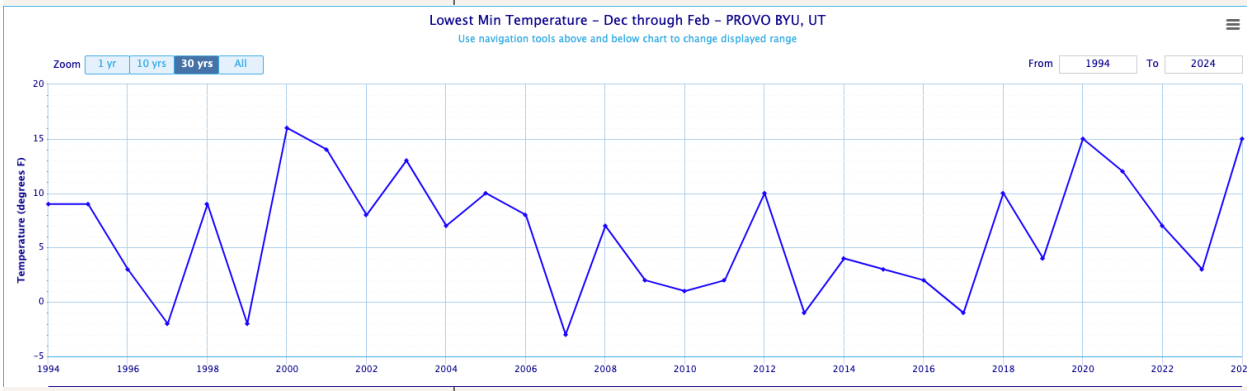
https://en.wikipedia.org/wiki/Gaussian_function

Climate in Utah



https://xmacis.rcc-acis.org/

Climate in Utah



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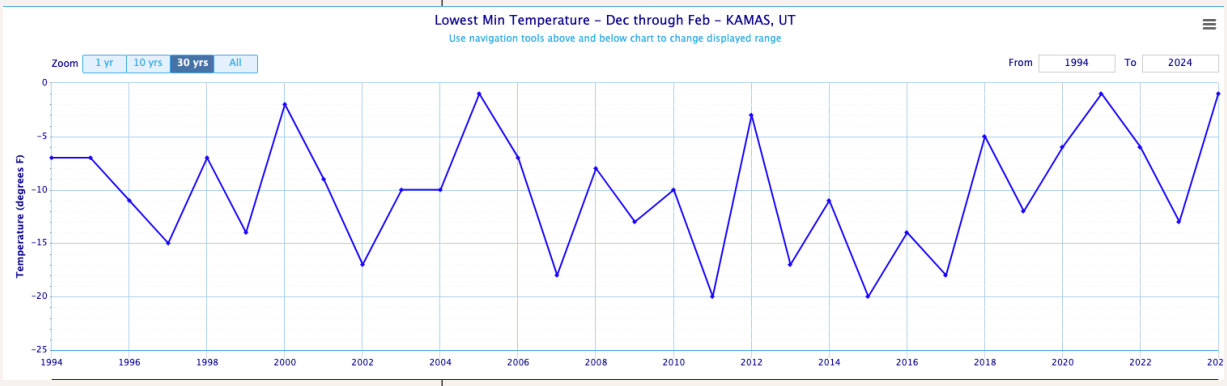
Climate in Utah



Climate in Utah

- Freeze-free days
  - Period from last frost in spring to first frost in fall
  - Determine the traditional "growing season"
  - Important to consider for annual plants and perennial flowering/fruiting plants

Salt Lake City

1990	04-30 (1990)	30	10-17 (1990)	30	169
1991	04-27 (1991)	31	10-24 (1991)	31	179
1992	03-11 (1992)	32	11-03 (1992)	29	236
1993	04-14 (1993)	31	10-29 (1993)	30	197
1994	04-08 (1994)	31	10-29 (1994)	30	203
1995	04-16 (1995)	31	10-22 (1995)	32	188
1996	04-28 (1996)	32	10-16 (1996)	31	170
1997	04-13 (1997)	27	10-13 (1997)	31	182
1998	04-18 (1998)	32	11-03 (1998)	32	198
1999	05-11 (1999)	30	10-16 (1999)	29	157
2000	04-01 (2000)	30	11-02 (2000)	30	214
2001	04-13 (2001)	31	10-12 (2001)	32	181
2002	05-08 (2002)	26	10-13 (2002)	32	157
2003	04-08 (2003)	30	10-26 (2003)	32	200
2004	04-11 (2004)	32	10-31 (2004)	30	202
2005	04-05 (2005)	32	11-12 (2005)	32	220
2006	04-20 (2006)	32	10-18 (2006)	31	180
2007	04-13 (2007)	32	10-22 (2007)	32	191
2008	05-02 (2008)	31	10-10 (2008)	32	160
2009	04-06 (2009)	32	10-26 (2009)	32	202
2010	05-07 (2010)	31	10-26 (2010)	32	171
2011	05-01 (2011)	32	10-26 (2011)	30	177
2012	04-07 (2012)	28	10-26 (2012)	29	201
2013	04-23 (2013)	31	11-03 (2013)	31	193
2014	04-30 (2014)	32	11-04 (2014)	29	187
2015	04-16 (2015)	32	11-07 (2015)	29	204
2016	03-19 (2016)	31	11-17 (2016)	30	242
2017	03-07 (2017)	29	10-15 (2017)	32	221
2018	04-03 (2018)	29	10-15 (2018)	29	194
2019	03-31 (2019)	32	10-10 (2019)	30	192
2020	04-14 (2020)	30	10-23 (2020)	32	191
2021	04-12 (2021)	32	11-17 (2021)	28	218
2022	04-13 (2022)	30	10-28 (2022)	32	197
2023	04-07 (2023)	32	10-28 (2023)	32	203
2024	-	-	-	-	-
Minimum	03-07 (2017)		09-13 (1928)		124
Mean	04-22		10-19		180
Maximum	06-06 (1914)		11-17 (2021)		242

https://xmacis.rcc-acis.org/

Climate in Utah

- Freeze-free days
  - Period from last frost in spring to first frost in fall
  - Determine the traditional "growing season"
  - Important to consider for annual plants and perennial flowering/fruiting plants

Provo - BYU

Year	Last	Value	First	Value	Season Length
1994	04-30 (1994)	31	10-29 (1994)	32	181
1995	05-13 (1995)	31	10-05 (1995)	31	144
1996	04-29 (1996)	30	10-17 (1996)	28	170
1997	04-13 (1997)	26	10-13 (1997)	29	182
1998	04-18 (1998)	32	10-18 (1998)	32	182
1999	05-11 (1999)	31	10-17 (1999)	29	158
2000	03-31 (2000)	31	11-02 (2000)	32	215
2001	04-13 (2001)	29	10-10 (2001)	32	179
2002	05-09 (2002)	31	10-13 (2002)	31	156
2003	04-08 (2003)	29	10-11 (2003)	32	185
2004	03-29 (2004)	32	11-01 (2004)	26	216
2005	04-11 (2005)	31	10-31 (2005)	31	202
2006	04-20 (2006)	31	10-18 (2006)	32	180
2007	04-11 (2007)	31	09-30 (2007)	32	171
2008	05-02 (2008)	30	10-11 (2008)	31	161
2009	04-27 (2009)	30	10-02 (2009)	32	157
2010	05-25 (2010)	32	10-27 (2010)	31	154
2011	05-02 (2011)	32	10-27 (2011)	29	177
2012	04-07 (2012)	27	10-25 (2012)	32	200
2013	04-23 (2013)	31	10-05 (2013)	31	164
2014	04-29 (2014)	30	10-28 (2014)	32	181
2015	04-16 (2015)	30	11-07 (2015)	26	204
2016	04-01 (2016)	32	11-17 (2016)	32	229
2017	04-10 (2017)	30	10-15 (2017)	30	187
2018	04-18 (2018)	30	10-15 (2018)	27	179
2019	03-31 (2019)	32	10-10 (2019)	29	192
2020	04-17 (2020)	29	10-23 (2020)	30	188
2021	04-07 (2021)	32	10-15 (2021)	29	190
2022	05-14 (2022)	29	10-28 (2022)	27	166
2023	04-20 (2023)	31	11-01 (2023)	29	194
2024	-	-	-	-	-
Minimum	03-29 (2004)		09-30 (2007)		144
Mean	04-20		10-19		181
Maximum	05-25 (2010)		11-17 (2016)		229

https://xmacis.rcc-acis.org/

Climate in Utah

- Freeze-free days
  - Period from last frost in spring to first frost in fall
  - Determine the traditional "growing season"
  - Important to consider for annual plants and perennial flowering/fruiting plants

Heber City

Frost/Freeze Summary for HEBER, UT

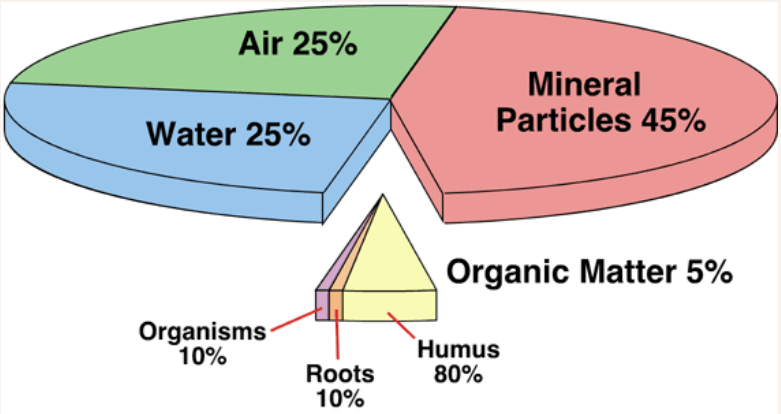
Each section contains date and year of occurrence, value on that date and number of missing values.
Click column heading to sort ascending, click again to sort descending.

Year	Last	Value	Missing	First	Value	Missing	Season Length
1980	06-16 (1980)	32	0	08-20 (1980)	31	0	64
1981	06-16 (1981)	31	0	09-26 (1981)	28	0	101
1982	06-10 (1982)	30	0	09-12 (1982)	32	0	93
1983	06-14 (1983)	27	2	09-20 (1983)	26	1	97
1984	06-12 (1984)	32	1	09-22 (1984)	28	1	101
1985	05-30 (1985)	31	0	08-13 (1985)	30	1	74
1986	05-23 (1986)	30	0	09-11 (1986)	31	2	110
1987	06-02 (1987)	30	0	09-17 (1987)	29	0	106
1988	05-21 (1988)	32	0	09-15 (1988)	31	0	116
1989	05-27 (1989)	32	0	09-11 (1989)	29	0	106
1990	06-02 (1990)	31	1	10-07 (1990)	32	1	126
1991	05-20 (1991)	31	0	09-15 (1991)	30	0	117
1992	05-11 (1992)	32	0	08-26 (1992)	30	0	106
1993	06-24 (1993)	31	0	09-13 (1993)	30	0	80
1994	06-09 (1994)	32	1	09-15 (1994)	30	0	97
1995	06-07 (1995)	31	0	09-21 (1995)	30	0	105
1996	05-24 (1996)	27	0	09-19 (1996)	29	0	117
1997	05-08 (1997)	29	0	09-28 (1997)	30	1	142
1998	05-23 (1998)	30	0	10-05 (1998)	27	1	134
1999	05-18 (1999)	32	1	09-27 (1999)	26	0	131
2000	06-01 (2000)	31	0	09-23 (2000)	30	1	113
2001	06-13 (2001)	27	0	09-09 (2001)	28	0	87
2002	06-11 (2002)	28	4	10-09 (2002)	32	2	119
2003	05-20 (2003)	31	0	09-14 (2003)	31	0	116
2004	05-26 (2004)	32	0	09-15 (2004)	32	0	111
2005	06-14 (2005)	32	0	09-26 (2005)	31	0	103
2006	05-29 (2006)	29	0	09-17 (2006)	31	0	110
2007	04-17 (2007)	30	1	10-08 (2007)	32	2	173
2008	-	-	10	-	-	8	-
2009	05-09 (2009)	32	3	10-02 (2009)	31	5	145
2010	06-17 (2010)	32	1	09-07 (2010)	32	0	81
2011	06-11 (2011)	32	0	10-07 (2011)	31	0	117
2012	06-11 (2012)	31	2	10-04 (2012)	29	1	114
2013	-	-	65	-	-	365	-
Minimum	04-17 (2007)			08-13 (1985)			64
Mean	05-31			09-18			110

https://xmacis.rcc-acis.org/

Soil

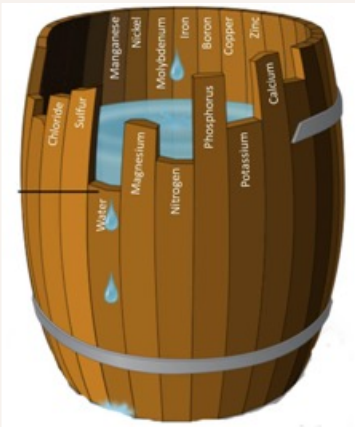
- What is soil?
  - Sand, silt, clay
  - Organic matter
  - Air, water (hopefully)
    - Watch out for compaction!
- Growing substrate
  - Provides anchorage for your plants
- Bank for nutrients and water



Soil

- Essential nutrients for plants
  - 16 – 17* essential
  - Macronutrient – need larger amounts
  - Micronutrient – need small amounts
- If ANY nutrient is lacking, plant growth and health is compromised
  - Most nutrients can be found in most soils here in Utah

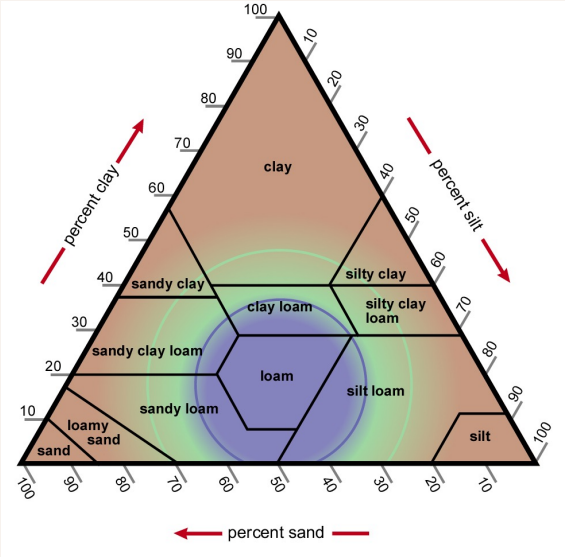
- Air
  - Oxygen (O)
  - Hydrogen (H)
  - Carbon (C)
- Soil
  - Nitrogen (N)
  - Phosphorous (P)
  - Potassium (K)
  - Sulfur (S)
  - Magnesium (Mg)
  - Calcium (Ca)
  - Iron (Fe)
  - Zinc (Z)
  - Manganese (Mn)
  - Boron (B)
  - Copper (Cu)
  - Molybdenum (Mo)
  - Chlorine (Cl)
  - Cobalt* (Co)



http://corn.osu.edu/newsletters/2011/2011-04/Mullen%202011-04a.PNG/image_preview

Soil

- What "type" of soil do you have?
  - % sand, silt, clay
  - "loam" = the goal
    - A good mix
- What does soil type/texture influence?
  - Water, nutrient, and air holding properties
    - Compaction potential
    - Watering schedule
    - Fertilizing/amending schedule
    - Plant selection
    - Maintenance



Soil

- Organic matter (OM)
  - Decomposed, once-living material
- Organic matter is king
  - The best soil improver
  - Can increase water and nutrient holding abilities
  - Improve structure of soil (air space)
  - "Soften" tough, compact soils
  - Maintain nutrient levels
- Be careful not to LOVE YOUR PLANTS TO DEATH with some sources of OM

Compost Type	N	P_2O_5	K_2O	pH	Salinity [dS/m]	Moisture Content [%]	C:N
	%						
Manure-Based							
Beef	1.1	0.9	1.3	8.5	4	28	12
Chicken	1.4	5.8	2.8	8.2	16	33	17
Dairy	1.0	0.7	1.5	8.5	8	39	12
Goat	1.0	0.9	1.9	8.4	5	54	10
Horse	0.7	0.3	0.9	8.6	4	37	28
Mink	1.1	3.0	0.3	6.4	6	41	8
Sheep	1.0	1.1	1.3	8.0	3	39	15
Turkey	2.2	5.3	2.2	8.2	11	89	10
Other							
Biosolids	1.8	1.5	0.2	6.9	5	43	7
Commercial	1.3	0.9	1.0	7.8	5	35	17
Municipal	1.2	1.1	0.7	7.8	5	38	17
Plant-Based	1.4	0.9	0.9	7.9	3	33	16

Stock, Miller; 2019

Soil

- USU Soil-related fact sheets

Sustainable Manure and Compost Application: Garden and Micro Farm Guidelines

Are Organic Matter Soil Amendments Created Equal?

It's All About Soil Structure!

Selecting and Using Inorganic Fertilizers

Selecting and Using Organic Fertilizers

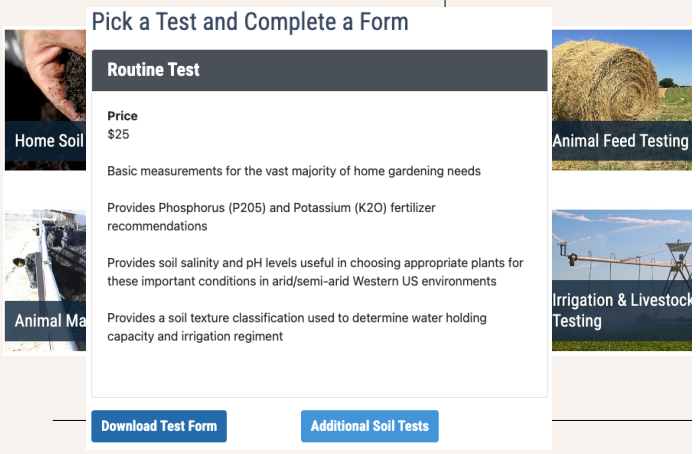
Backyard Composting in Utah

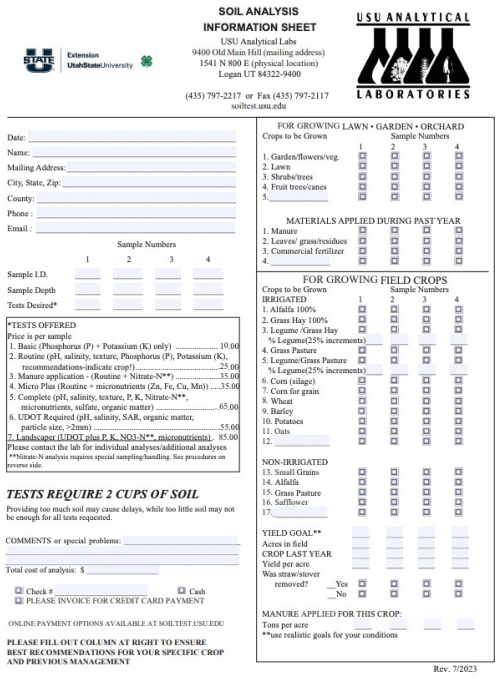
Preparing and Improving Garden Soil

Topsoil Quality Guidelines for Landscaping

Soil

- Testing
  - www.usual.usu.edu





SOIL ANALYSIS INFORMATION SHEET

USU ANALYTICAL LABORATORIES

Extension UtahStateUniversity

USU Analytical Labs
9400 Old Main Hill (mailing address)
1541 N 800 E (physical location)
Logan UT 84322-9400

(435) 797-2217 or Fax (435) 797-2117
soiltest.usu.edu

Date:
Name:
Mailing Address:
City, State, Zip:
County:
Phone :
Email :

Sample Numbers

	1	2	3	4
Sample I.D.				
Sample Depth				
Tests Desired*				

*TESTS OFFERED
Price is per sample
1. Basic (Phosphorus (P) + Potassium (K) only) 10.00
2. Routine (pH, salinity, texture, Phosphorus (P), Potassium (K), recommendations-indicate crop!) 25.00
3. Manure application - (Routine + Nitrate-N**) 35.00
4. Micro Plus (Routine + micronutrients (Zn, Fe, Cu, Mn)) 35.00
5. Complete (pH, salinity, texture, P, K, Nitrate-N**, micronutrients, sulfate, organic matter) 65.00
6. UDOT Required (pH, salinity, SAR, organic matter, particle size, >2mm) 55.00
7. Landscaper (UDOT plus P, K, NO3-N**, micronutrients) 85.00
Please contact the lab for individual analyses/additional analyses
**Nitrate-N analysis requires special sampling/handling. See procedures on reverse side.

TESTS REQUIRE 2 CUPS OF SOIL
Providing too much soil may cause delays, while too little soil may not be enough for all tests requested.

COMMENTS or special problems:

Total cost of analysis: $

☐ Check # ☐ Cash
☐ PLEASE INVOICE FOR CREDIT CARD PAYMENT

ONLINE PAYMENT OPTIONS AVAILABLE AT SOILTEST.USU.EDU

PLEASE FILL OUT COLUMN AT RIGHT TO ENSURE BEST RECOMMENDATIONS FOR YOUR SPECIFIC CROP AND PREVIOUS MANAGEMENT

FOR GROWING LAWN • GARDEN • ORCHARD

Crops to be Grown	Sample Numbers 1	2	3	4
1. Garden/flowers/veg.	☐	☐	☐	☐
2. Lawn	☐	☐	☐	☐
3. Shrubs/trees	☐	☐	☐	☐
4. Fruit trees/canes	☐	☐	☐	☐
5._____	☐	☐	☐	☐

MATERIALS APPLIED DURING PAST YEAR

1. Manure	☐	☐	☐	☐
2. Leaves/ grass/residues	☐	☐	☐	☐
3. Commercial fertilizer	☐	☐	☐	☐
4. _____	☐	☐	☐	☐

FOR GROWING FIELD CROPS

Crops to be Grown	Sample Numbers 1	2	3	4
IRRIGATED				
1. Alfalfa 100%	☐	☐	☐	☐
2. Grass Hay 100%	☐	☐	☐	☐
3. Legume /Grass Hay	☐	☐	☐	☐
% Legume(25% increments)				
4. Grass Pasture	☐	☐	☐	☐
5. Legume/Grass Pasture	☐	☐	☐	☐
% Legume(25% increments)				
6. Corn (silage)	☐	☐	☐	☐
7. Corn for grain	☐	☐	☐	☐
8. Wheat	☐	☐	☐	☐
9. Barley	☐	☐	☐	☐
10. Potatoes	☐	☐	☐	☐
11. Oats	☐	☐	☐	☐
12._____	☐	☐	☐	☐
NON-IRRIGATED				
13. Small Grains	☐	☐	☐	☐
14. Alfalfa	☐	☐	☐	☐
15. Grass Pasture	☐	☐	☐	☐
16. Safflower	☐	☐	☐	☐
17._____	☐	☐	☐	☐
YIELD GOAL**				
Acres in field				
CROP LAST YEAR				
Yield per acre				
Was straw/stover removed?	☐ Yes	☐	☐	☐
	☐ No	☐	☐	☐
MANURE APPLIED FOR THIS CROP:				
Tons per acre				

**use realistic goals for your conditions

Rev. 7/2023

Soil

- How to collect soil sample
  - 6-12″
  - Zone your space
  - Subsample

Urban Garden Soils: Testing and Management

Melanie Stock, Tiffany Maughan, and Paul Grossl

Soil

- Soil test results are in, now what?
  - Know thresholds
  - Add what's needed
  - Excess nutrients do not help plants and can have negative environmental effects

Urban Garden Soils: Testing and Management

Melanie Stock, Tiffany Maughan, and Paul Grossl

Understanding Your Soil Test Report

Grant E. Cardon, USU Extension Soil Specialist
Jan Kotuby-Amacher, Coordinator for North American Proficiency Testing Program
Pam Hole, Supervisor USU Analytical Labs
Rich Koenig, Washington State University

Table 2. Soil test values and fertilizer recommendations for nitrogen, phosphorus, and potassium. Recommendations are for a 100 ft² garden plot.

Test Category	NITROGEN (N)		PHOSPHORUS (P_2O_5)		POTASSIUM (K_2O)	
	Test Result	Fertilizer Recommendation	Test Result	Fertilizer Recommendation	Test Result	Fertilizer Recommendation
Very Low	<10	Add 0.3 lbs N	0–10	Add 0.3 lbs P_2O_5	0–70	Add 0.4 lbs K_2O
Low	10–25	Add 0.2 lbs N	11–20	Add 0.2 lbs P_2O_5	70–125	Add 0.2 lbs K_2O
Adequate	>25	NONE	21–30	NONE	126-300	NONE
High	-	NONE	>31–60	NONE	>300	NONE

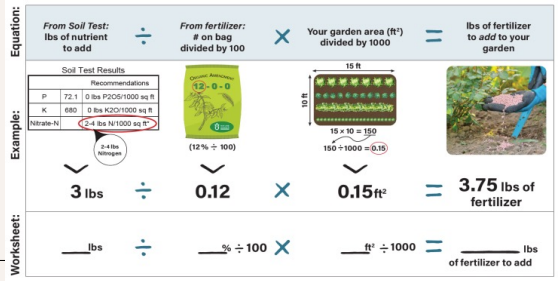


Table 3. Salinity thresholds and the ideal pH for crops. Salinity thresholds indicate the tolerance level of different crops. At salinities greater tha the threshold, yield begins to decline.

Crop Type	Ideal pH[1]	Salinity Threshold [dS/
Apple	5.5–6.5	1.4
Artichoke	6.5–7.0	6.1
Blackberry	5.5–7.0	1.5
Corn	5.5–7.5	1.7
Bean, green	6.0–7.0	1.0
Beet	6.5–8.0	4.0
Broccoli	6.0–6.5[3]	2.8
Carrot	6.0–7.0	1.0
Cucumber	5.5–7.0	2.5
Garlic	6.2–7.0	3.9
Grape	5.5–7.0	1.5
Lettuce	6.0–7.0	1.3
Onion	6.0–7.0	1.2
Pea	6.0–7.5	3.4
Peach	6.0–7.0[4]	1.7
Pepper	5.5–7.0	1.5
Plum	6.8–8.5	2.6
Potato	4.8–6.5	1.7
Spinach	6.0–7.5	2.0
Strawberry	5.5–6.5	1.0
Sunflower	6.5–7.5[5]	4.8
Tomato	5.5–7.5	2.5
Zucchini	6.0–7.0	4.9

[1]Ideal pH ranges from Perry, 2003 unless otherwise noted.
[2]Salinity threshold table values from Tanji and Kielen, 2003, T A1.1 [3]Lyon, 2017; [4]DuPont, 2020; [5]Berglund, 2007

Soil

- Typical Utah soils (very general)
  - Alkaline pH (pH > 7)
  - Relatively low organic matter (2-3%)
  - Potassium and Calcium tend to be naturally high
  - Iron is abundant, but not "bio-available" due to pH
- New homes
  - Watch out for subsoil
    - Can be saltier, rockier
  - Foreign topsoil – know the source, try to get analysis beforehand

Water

- Water is a precious resource and should be used judiciously
- But remember: **your plants will die without water**
  - We often want a plant that does not actually exist!
  - Water stress often manifests itself in a cumulative manner in older, mature plants
    - "But we had such a wet winter!"

SLOW THE FLOW SAVE H_2O

https://slowtheflow.org/

Utah Water Savers

https://www.utahwatersavers.com/

https://conservewater.utah.gov/weekly-lawn-watering-guide/

Water

- Irrigation methods
  - Flood
  - Sprinkler
  - Micro sprinkler
  - Drip irrigation
- Different spaces in your landscape will likely need different irrigation methods
  - Lawns (sprinklers)
  - Perennial plant areas (drip, microsprinklers)
  - Vegetable gardens (drip)
  - Fruit trees (microsprinklers, drip)

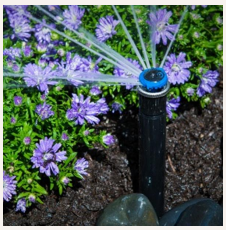
Photos 2,3: homedepot.com

Water

- Sprinklers
  - 30 – 45+ psi
  - Fixed heads, rotor heads
  - Head-to-head coverage
- Drip irrigation
  - 15 – 30 psi
  - Many different outputs and spacings
  - Inline vs separate emitters
- Microsprinklers
  - 20 – 55+ psi
  - Many different outputs
- Often wise to keep with one brand – some cross compatible
- Do not mix types on same zone

http://agritech.tnau.ac.in/agriculture/images/agri_agrometeorology_microclimate.JPG

Hunter MP Rotator

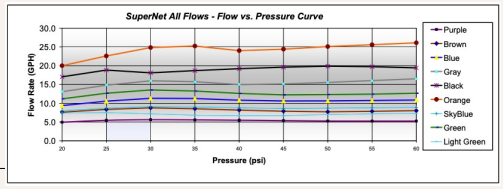


https://www.dripdepot.com/2000-series-mp-rotator-thread-female-arc-360-degree

Rainbird R-Van

https://www.dripdepot.com/r-van-rotary-nozzles-radius-8-feet-14-feet-arc-adjustable-45-270-degree

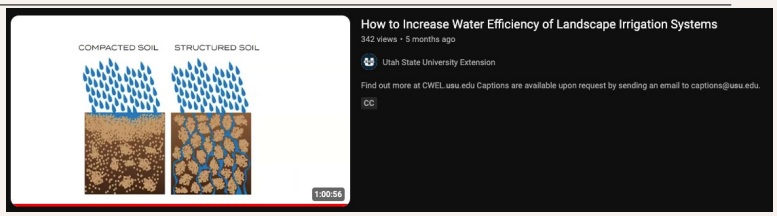
https://www.netafim.africa/our-solutions/irrigation-offering/Sprinkler-irrigation/qyronet/

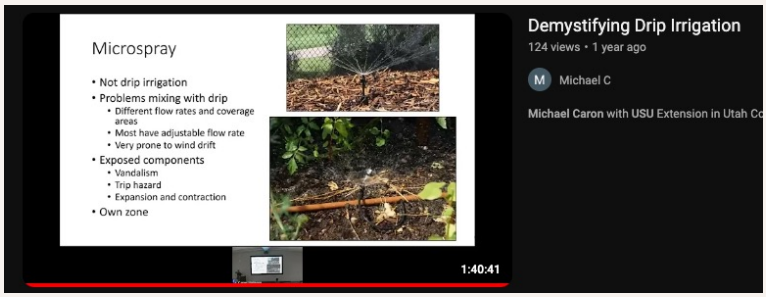


https://www.netafimusa.com/bynder/BEBA4B71-C5AE-48C5-80CD8827E4726A92-sprinkler-tech-guide.pdf

Water

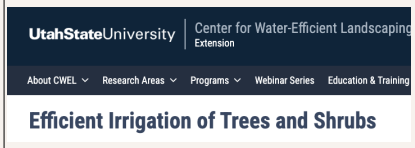
- Some great resources





Water

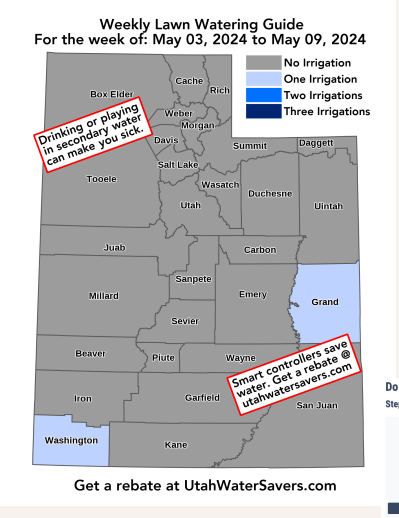
- How much should I water my plants?
  - DEPENDS!
  - Should always keep soil moist for newly planted plants
  - Depending on plant, establishment can take months to years.
  - Waterwise plants still have establishment phase
  - After establishment, use references!



JORDAN VALLEY WATER
CONSERVANCY DISTRICT

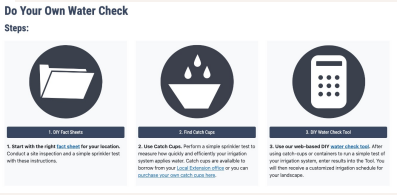
Water

- How much/frequently should I water my lawn?
  - DEPENDS!
  - Weather, grass species, soil type, sprinkler efficiency
  - Shouldn't need to water your established lawn more than three days a week (in hottest time of year)
  - May consider spot watering for sprinkler system inefficiencies
- If possible, water early morning, not when windy



WATERCHECK
A USU EXTENSION PROGRAM

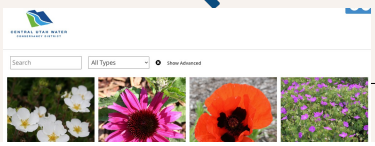
Salt Lake County
Iron County
Washington County
Davis County
Weber County
Morgan County
Summit County



Plant Selection

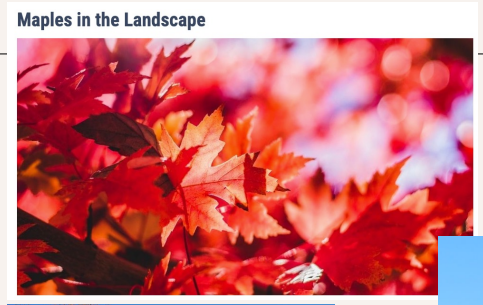
- Where to begin?
  - Demonstration gardens! Resources!

Conservation Garden Park
Jordan Valley Water Conservancy District
Botanical Center
UtahStateUniversity.
TreeBrowser

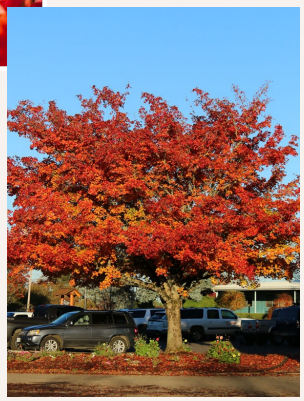


Plant Selection

- Maybe avoid growing…
  - Based on climate, soil, water, make educated decisions
  - Examples
    - Maples!
      - Iron chlorosis due to high pH soils
      - Some are more prone, but won't show serious problems for years



https://www.fast-growing-trees.com/products/autumnblaze?variant=13940786397236



https://jfschmidt.com/all-trees/introductions/pacific-sunset-maple/

Plant Selection

- Maybe avoid growing…
  - Examples
    - Acid-loving plants
      - Rhododendrons
      - Azaleas
      - Blueberries
      - Red Maples
      - Sugar Maples
    - Utah native plants in their non-native habitat
      - Quaking aspen in hot, dry, low-elevation areas
      - Red Twig dogwood in hot, dry areas

https://extension.usu.edu/pests/ipm/notes_orn/list-treeshrubs/iron-chlorosis

Plant Selection

- Plant lists!

April 2010 Horticulture/Landscapes/2010-01pr

Shrub Selection for Utah Landscapes

Taun Beddes, JayDee Gunnell, Heidi Kratsch and *Rick Heflebower*

Planting Basics

- Best time to plant?
  - Dormant = early spring
  - Growing = Spring after last frost or fall
- Area preparation
  - Clear of weeds (especially important in perennial plantings)
  - Supply nutrients lacking in soil
    - Amendments
    - Granular fertilizers
  - Till if desired / needed
  - Grade / shape as desired / needed

Planting Basics

- Area preparation (cont.)
  - Do I use landscape fabric?
    - Sometimes makes sense
    - Limits oxygen exchange
    - Maintenance can be frustrating

https://extension.unh.edu/blog/2019/05/should-i-use-landscape-fabric-keep-weeds-out-my-perennial-garden

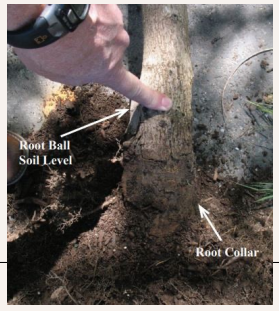
https://extension.unl.edu/statewide/dodge/landscape-fabric/

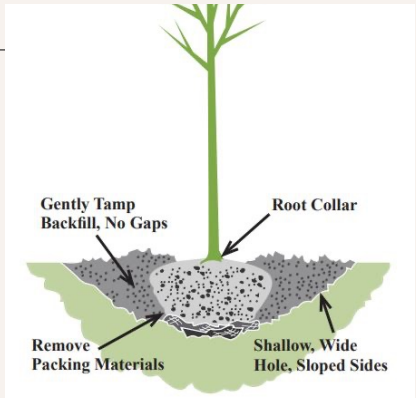
https://www.gardeners.com/how-to/using-weed-fabric/7524.html

https://www.amazon.com/WAHHWF-Non-Woven-Geotextile-Underlayment-Landscape/dp/B0C3YJZ9HK

Planting Basics

- Planting (woody plants)
  - Ensure root ball is well hydrated
  - Remove burlap (at least cut slits)
  - Break up / prune roots if circling
  - Dig hole 2-3x width of roots
  - Soil line right below root collar
  - Backfill with native soil, some amendment ok (not more than 1/4 to 1/3)
  - Water thoroughly
  - Mulch around plant





Planting Basics

- Planting (herbaceous plants)
  - Less finicky than trees
  - Break up roots if too thick
  - Bury root ball completely
  - Don't plant too deep (some exceptions exist, rule of thumb)
  - Water thoroughly

Maintenance

- Mulch
  - Especially in perennial beds
  - Many types – I prefer wood chips
  - Unless inorganic – will need replenishing
- Water
  - Establishment period – keep soil moist
    - Daily, every other day, weekly, every other week, etc.

- Fertilization
  - Depends on plant
    - Lots of woody plants do not need much (any) yearly fertilization
    - Herbaceous plants - refer to sources, usually at least once a season in spring (N), see soil tests

Thank you!

Presentation Survey

https://usu.co1.qualtrics.com/jfe/form/SV_eLNyiyasXoEBkAC

Presentation Resources

https://extension.usu.edu/wasatch/wesley-crump-presentation-resources