



Photos by Patrick Mangan

Start Your 2020 Victory Garden!

A practical guide on the ins and outs of developing a backyard garden plot to grow your own fresh vegetables for a local, sustainable, secure food supply in the times we are having.

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Whatever you call it, let's get out there and do it!

“Victory Gardens,” “Food Security Gardens,” “Local Food System Gardens,” “Vegetables of the Apocalypse Gardens.”

No matter what you want to call it, you're interested in gardening.

I'll stick with “Victory Gardens” for this guide. It has a nice historical nod to the past, and addresses our current interests. I hope this guide can give you some good, reliable and useful information about establishing a garden, and get you out there planting some vegetables.

- We all have goals for why we are picking up the shovel and planting a garden this spring. Whether it is healthy eating, regional food security and sustainability, keeping yourself occupied in a time of doubt, or being worried about future food shortages, it is a good time to start your own garden plot.
- Think about your goals and desired outcomes, it'll help you make some decisions as you go down the pathway of planning and developing your garden idea.

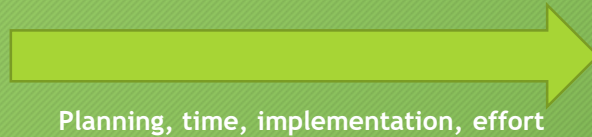


Source: USDA National Agricultural Library

How to use this guide.....



Patrick's house on day 1



Planning, time, implementation, effort



Patrick's house seven years later

Think of this as a beginning vegetable garden “picture book.”

Read through the slides, look at the pictures, and think about how the information applies to your site, goals, and desired future vegetable garden.

Then, go outside and start to make your garden dreams happen!

Table of Contents: Where we are going

- Section 1: (this one) Bitterroot Valley Climate data for gardening. Site selection for a garden, and keeping the deer out.

(coming soon)

- Section 2: Garden soils, taking soil samples, and what a soil lab report tells you.
- Section 3: Garden beds, raised beds, and container gardening.
- Section 4: Soil amendments and preparing the garden. What to grow?
- Section 5: Seeding and transplanting plants when the time is right.
- Section 6: Watering and weed management in the garden.
- Section 7: What could possibly go wrong? Disease, insects, and other things to keep a watch out for. IPM management practices.
- Section 8: Harvest time! Canning and storage
- Section 9: Putting the garden beds to sleep for the winter
- Section 10: Next year...

Climate data of the Bitterroot Valley

(as intersects with gardening needs)



Some important questions for us to ask in our area...

- When is the last frost in the spring?
- When is the first frost in the fall?
- How many days of frost-free growing does that give me?
- How will daily temperatures influence my garden choices?
- Other climate issues I should consider?



Approximately 120 frost-free growing days in the Central Bitterroot Valley

<u>First Frost</u> (% chance the first frost will occur before this date)			<u>Last Frost</u> (% chance the last seasonal frost will occur before this date)		
10%	50%	90%	10%	50%	90%
SEP 02	SEP 17	OCT 02	MAY 06	MAY 22	JUN 08

This chart is a lot of fun. In a nutshell it is saying three things:

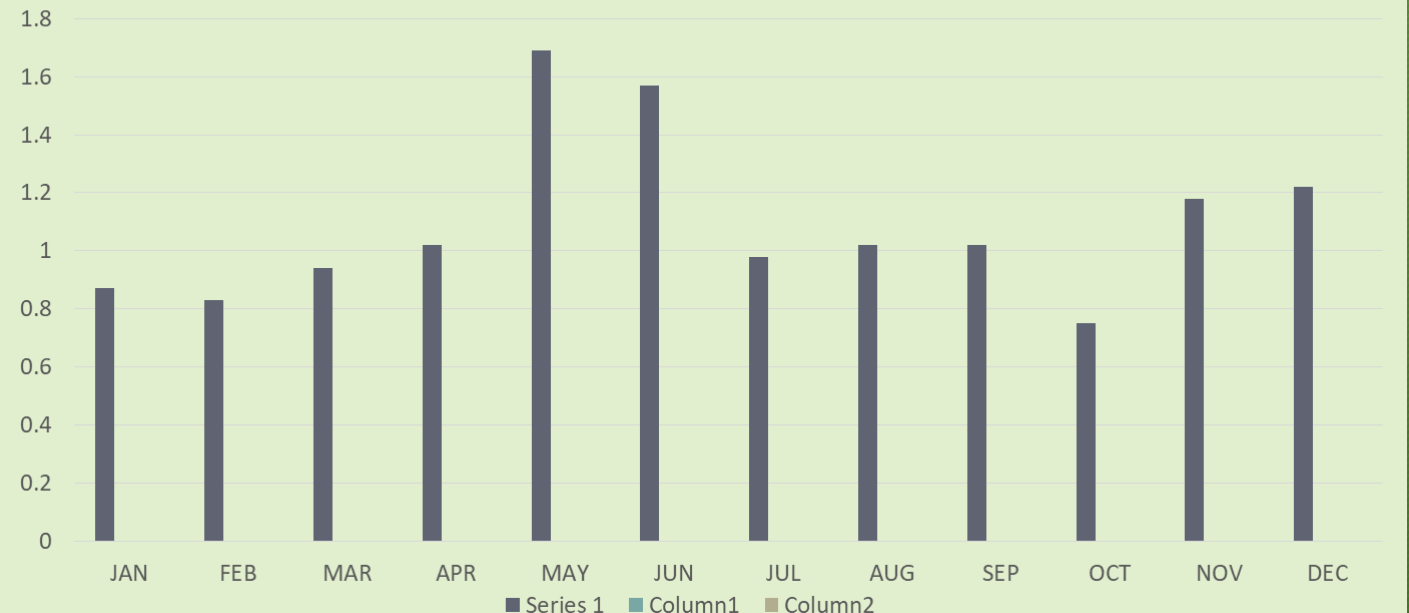
- 1) Mountain environments are erratic weather areas. Always plan ahead when gardening. 30-year averages swing wildly from year to year.
- 2) The last spring frost will probably occur somewhere around May 22nd, +/- 2 weeks.
- 3) And the first frost will probably occur somewhere around September 17th, +/- 2 weeks.

We typically have a wet spring and a dry summer

- We receive a good portion of our annual precipitation (as rain equivalences) in the late spring and very early summer.
- BUT, there is a time, usually around the middle of June, when the rain shuts off, and the sun comes out. It then creates long, hot, dry summer conditions.
- Summer precipitation that does fall will most likely come in the form of thunder showers, which can be isolated in localized geography, very intense for a short duration, or come as a hail event.

30 Year Average annual precipitation as rainfall= 13.09 inches

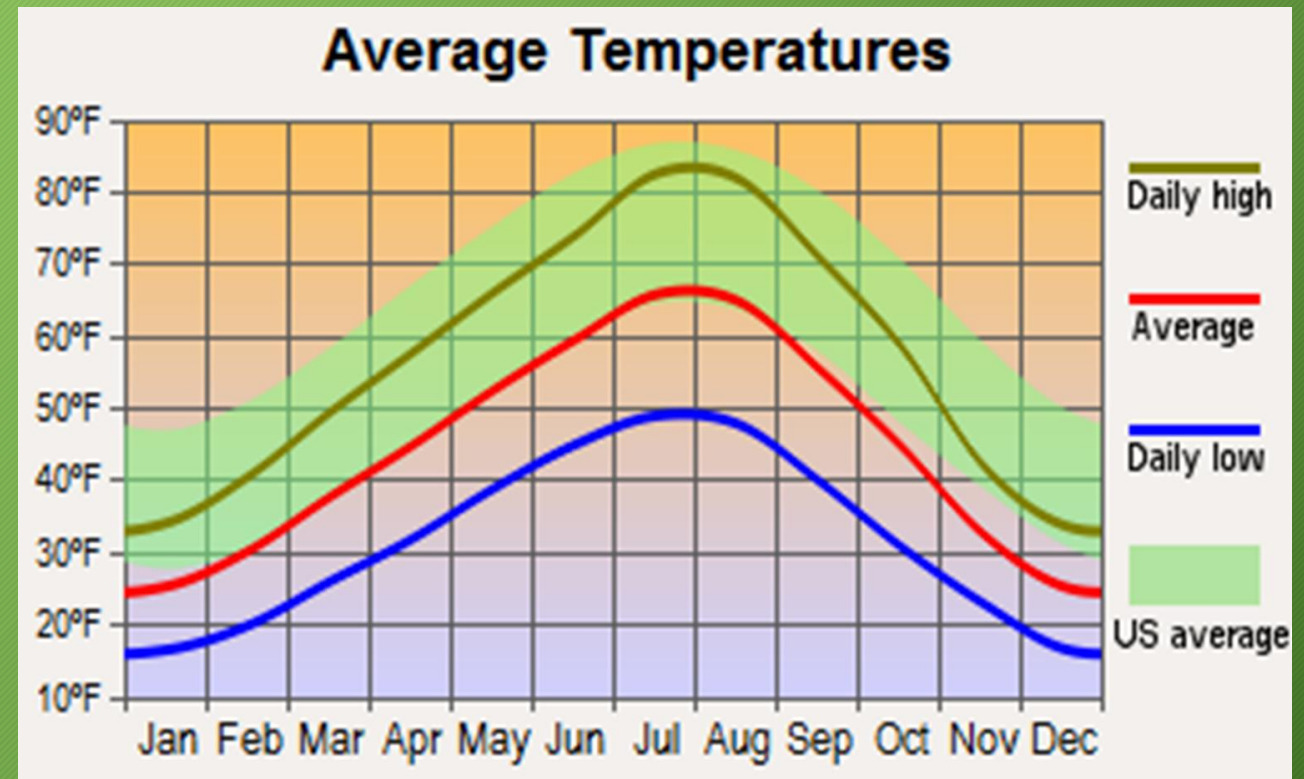
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0.87	0.83	0.94	1.02	1.69	1.57	0.98	1.02	1.02	0.75	1.18	1.22



Our Average Summer Air Temperatures are, well, Average... *BUT....

- At first glance, this graph shows that we are about average for other US cities. Especially when it comes to summer temperatures. The rest of Montana calls us the “Banana Belt” because they usually look a lot colder in the winter months.
- Two important take home messages:
 - In summer months, daily highs can get up to the low to mid 90’s.
 - Nightly lows, even in the summer, usually cool off drastically from the daily highs, and hit the low 50’s, or even mid-40 degrees F.
 - Some plants, like tomatoes and peppers don’t like the cold nights much
 - Other plants, like spinach and other greens, don’t like the heat in the days as much.

30 year Average High and Low Temperatures,
Hamilton, MT



We get hot, but not that hot...

- Another measure of the temperatures during the growing season are called Growing Degree Days (GDD). These can also be called Growing Degree Units (GDU).
- As a quick explanation, GDD are the accumulated air temperature heat units throughout the whole growing season. It is a way to represent how much of the growing season the air temperatures are in the temperature sweet-spot for optimal plant growth.
- In the Bitterroot we average around 2,100 GDD.
- Some plants, like corn and tomatoes, usually want more heat units than this.
- We will talk more about how to apply this when we get to the conversation about what plants we choose for our gardens.



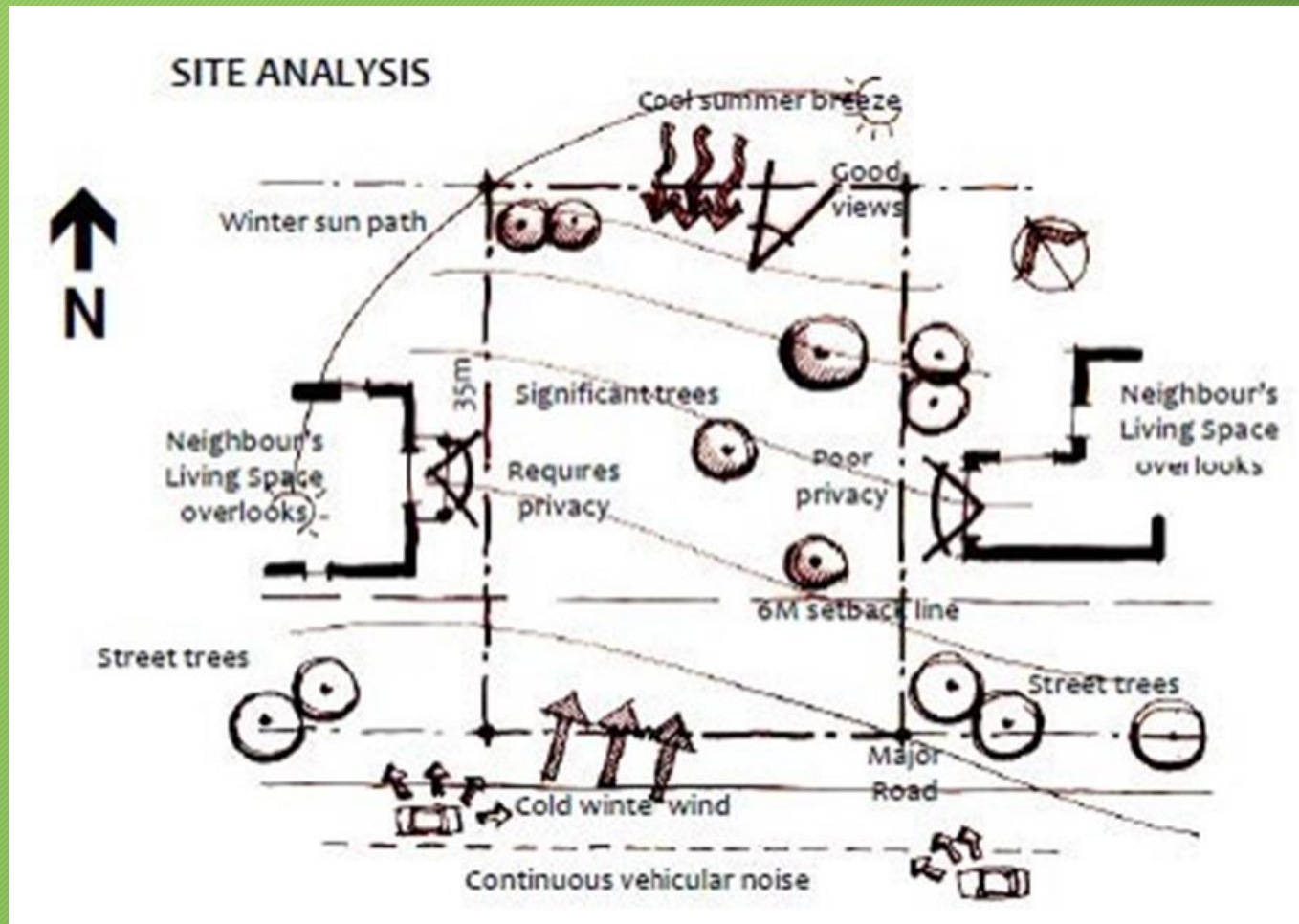
Image source: Alabama Extension Service

<https://www.aces.edu/blog/topics/crop-production/adapting-corn-production-to-climate-in-alabama/>

Climate Take-Homes:

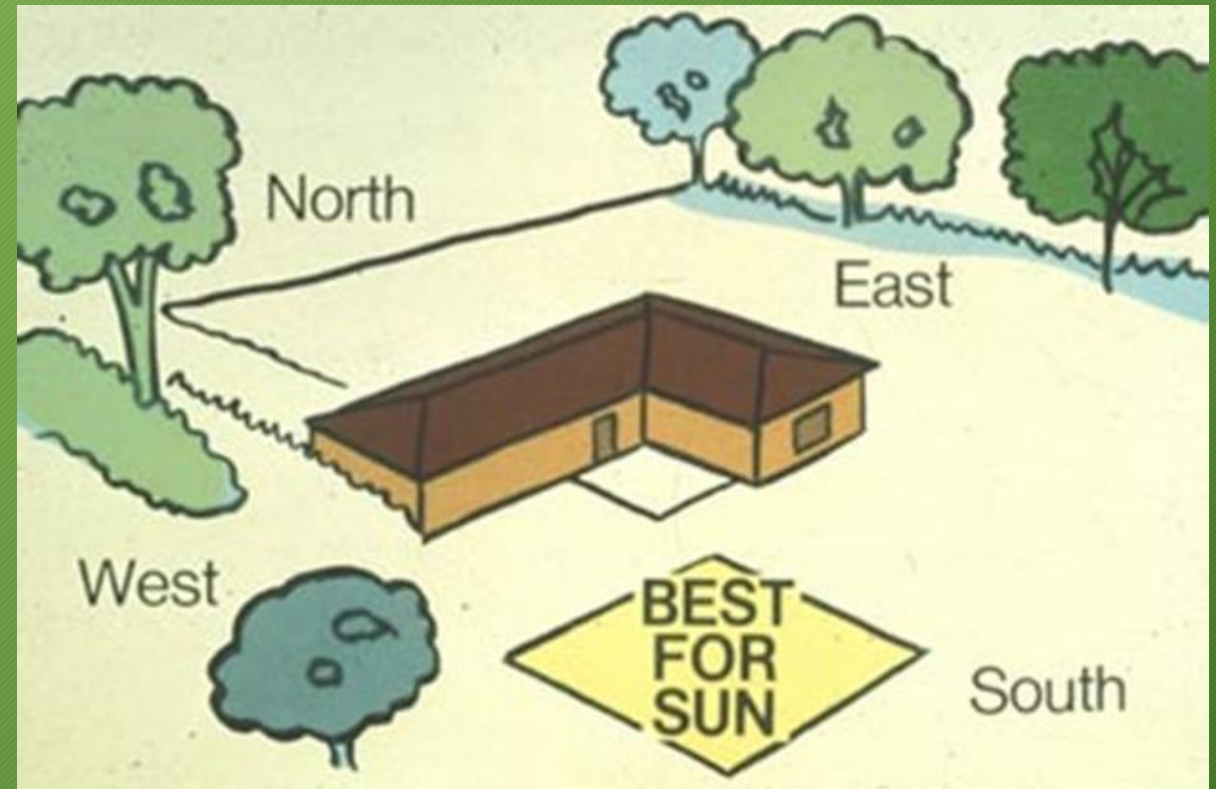
- We have approximately 120 days of frost-free growing in the Bitterroot
- Our last spring frost usually occurs sometime in late May/ early June
- Our first fall frost usually occurs sometime in early September
- We can have long, hot, dry periods in the summer months, with low humidity.
- Our mountain ecosystems can be very erratic, and can get cold or change quickly.
- Hail and thunderstorms are another challenge we face when gardening in Montana.

Choosing a good site for your garden



A couple of things to think about in garden placement

- A good site for your garden will get at least 8-10 hours of direct sun in the heart of summer, more is better.
- Think about what side of a building it should be on (south side) and any large trees that will cast shadows across the garden space.
- Avoid any depressions or cold air sinks, where cold night air can pool.
- Also take into consideration any prevailing winds. Try to minimize exposure to wind when possible.



Other site selection questions to consider...

Other questions to consider:

- What is my water source? How close is it?
- What size do I want my garden to be?
 - ¼ acre (10,000 square feet) can produce enough food for a family of 5
- Will it be incorporated into other landscaping designs, as an edible landscape?
- How much time do I have to develop and maintain my garden?
- Does it fit into my yard design and other uses? Is it in the right place for other uses I plan for my yard?
- Are there off-site locations I should consider, like a community garden plot?



Photo source: Colorado State University Extension
<https://extension.colostate.edu/topic-areas/yard-garden/>

Should I be close to my house or building?

- It depends....

- The south side of a structure or building can be a great place for a garden.
 - The south side of a building can serve as a heat-sink, absorbing heat energy from the southern sun during the day, and radiating it back out to your crop over the night. Some plants, like tomatoes, might really like that. This can be great at both ends of the season, early spring and later fall, when light and heat units are fading.
- BUT think about...
 - That heat loading might be too much of a good thing for many plants, and burn them, or cause heat stress.
 - Big windows or other reflective surfaces can reflect and intensify the sun's light and burn nearby plants, essentially cooking them to death.



Photo source: Michigan State University Extension
https://www.canr.msu.edu/resources/choosing_a_smart_site_for_your_vegetable_garden

Am I invited?



It's okay, we don't have deer problems in western Montana...

But just in case you face some deer pressure, here are some fencing ideas.

Full Exclusion fencing

- 6-8 foot tall fencing recommended

Fencing can be really expensive. There are ways to make some short-cuts, and make a “fix” for the situation on the shorter term, but generally you get what you pay for.

Considerations for fencing include: how big of an area are you excluding? How will you access the area easily? Does the visual appeal matter to you? Can your fence design or materials cause unintended issues for your dog, or bird life?

- Popular materials for fencing include: woven wire, electrical wire, plastic or wire mesh, and wood.



Full Exclusion fencing- 8 foot electric fence

- Can be moderate cost to install
 - \$1.50-2.50 per foot
- Consider support post materials and tension, particularly on corners
- Have to maintain a good electrical charge that is not grounded out by vegetation
- High maintenance needs to manage effectiveness
- Work best when deer are hesitant



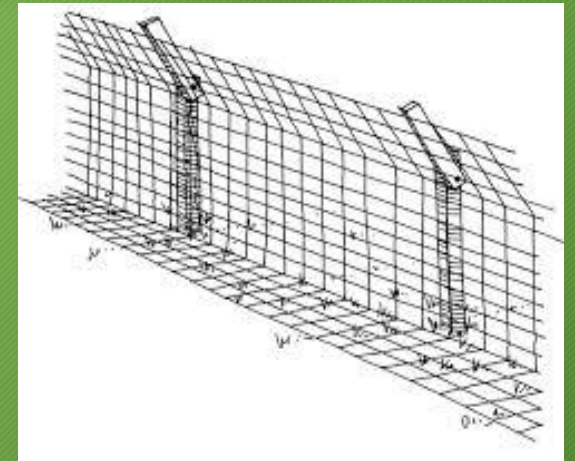
Full Exclusion fencing- 8 foot woven wire fence

- High installation costs
- \$4.00-6.00 per foot installation costs
- Very effective at stopping deer when installed properly
- Lower maintenance needs once installed



Full Exclusion fencing- Hybrid Designs

- Combinations of materials: mesh on bottom, wire on top?
- Retrofitting an old fence to become deer-proof by extending a short post higher?
- Angling of upper supports and wires outward to keep deer from jumping over the fence



Mesh netting

- Cheaper alternative to building permanent fencing
- Various costs and quality of product
- Varying levels of efficacy
- Concerns for bird capture?



Enclosure to certain features

- Berry patch enclosures
- Garden enclosures
- Only in critical areas
- Cheaper to construct?
- Will it limit your ability to get into the space and manage the crop?



So ready to choose your site?

Get out there and survey your place, find the spot you think your garden will work, and begin to envision what it might look like in the near future...



Next up....

- In Section 2:
 - We will spend a lot of time talking about garden soils
 - How soils are formed
 - The components that make up the soil community
 - What soil texture you have and what it tells us about how it will behave in your garden
 - Getting a soil test done to determine some key measurement criteria



Questions?

- If you have thoughts or questions, feel free to reach out to your local extension agent.

Or, give me a call (especially if you're in Ravalli County!)

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