

## A Citizen Science Approach to Identifying

## Locally Adapted Apple and Peach Trees

WESLEY CRUMP  
USU EXTENSION  
HORTICULTURE  
WASATCH AND SUMMIT  
COUNTIES



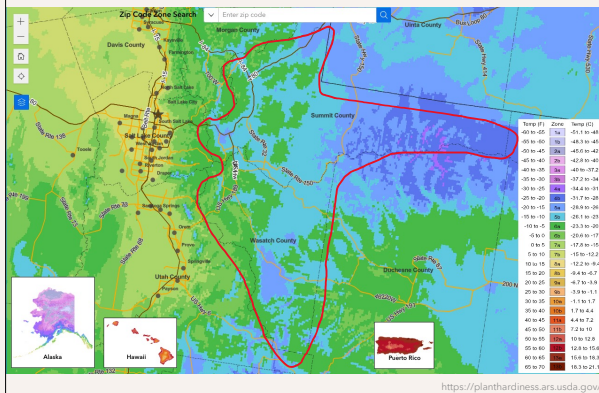
## Outline

- Project origins
- Citizen science in general
- Fruit tree citizen science projects
- Historic apple trees
- Survey (!!!)



## Project genesis

- Wasatch and Summit counties in Utah
- Zone 5a - 6a
- +/- 80-100 freeze-free days
  - Early and late freezes common
- Commonly receive the questions
  - "Can I grow fruit trees here?"
  - "What are the best apples to grow here?"
  - "Can Redhaven peaches grow here?"



## Project genesis

- We're growing peaches
- Changing climate increases need for hyper-local information



## Traditional approach

- Trialing orchards
- Pros
  - Demonstrations
  - All in same area, same environment, same treatment
- Cons
  - Cost
  - **Establishment time**
  - All in same area, same environment, same treatment



## Alternate approach

- Citizen science project
  - Use the trees that are **already** growing and thriving
- Alone, observations are anecdotal
- In mass, observations become powerful data



## Citizen science

- “The practice of engaging the public in a scientific project...that produces reliable data and information...” (1)
- Examples
  - iNaturalist
  - National Phenology Network
  - Natural History Museum of Utah
  - USU BRAT
  - Sageland Collaborative

<https://www.inaturalist.org/>

<https://www.usanpn.org/>

<https://brat.riverscapes.net/>

<https://nhmu.utah.edu/citizen-science>

## Citizen science

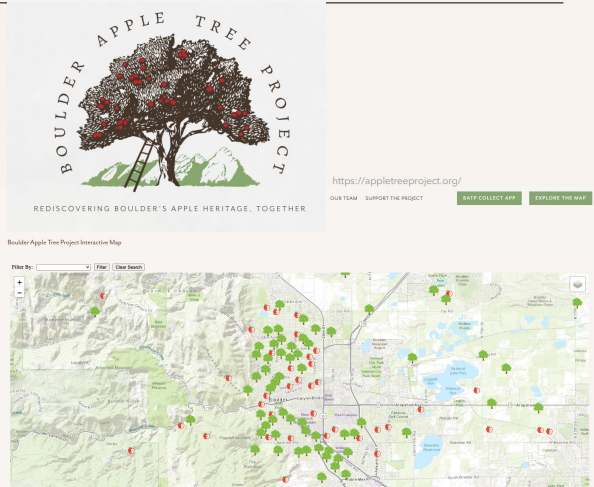
- Fruit tree specific resources
  - Orange Pippin

<https://www.orangepippin.com/trees.aspx>

1) McKinley, D. C., et al. (2017). Citizen science can improve conservation science, natural resource management, and environmental protection. *Biological Conservation* 208: 15-28. <https://doi.org/10.1016/j.biocon.2016.05.015>

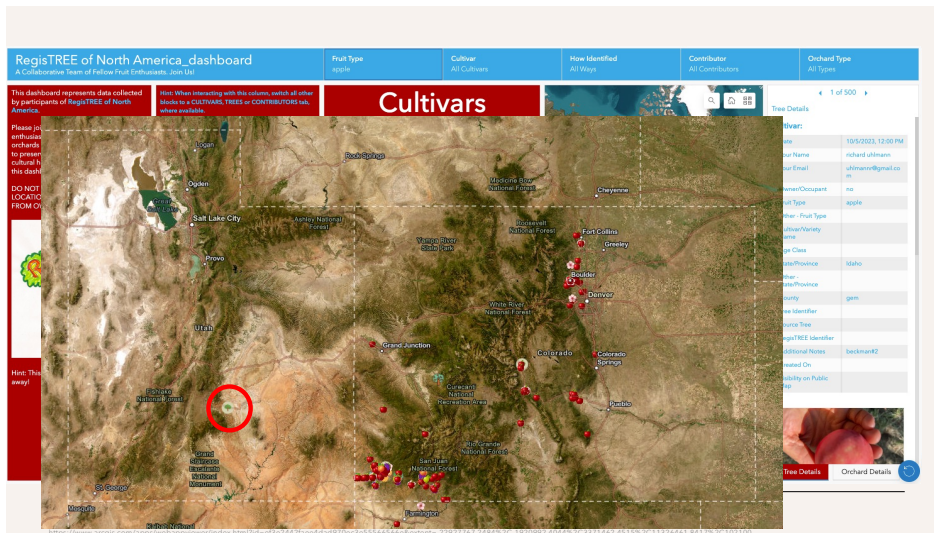
## Citizen science

- Fruit tree specific resources
  - Orange Pippin
  - Boulder Apple Project



## Citizen science

- Fruit tree specific resources
  - Orange Pippin
  - Boulder Apple Project
  - RegisTREE of North America

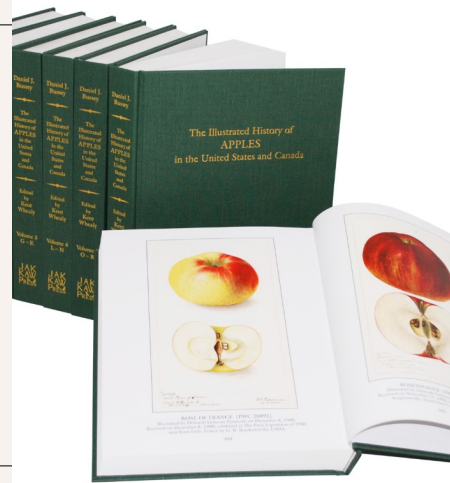


## Wasatch Back Fruit Tree Project (WBFTP)

- Identifying and preserving fruit trees that survive and thrive along the Wasatch Back
- Started in 2023
- 17 participants
- 101 trees registered
- What we collect:
  - Bloom time
  - Harvest time
  - Tree info (cultivar, age, exposure, management)



Variation exists within every crop you are growing



### What I am not suggesting

- Market gardeners and small-scale commercial producers plant the majority of their crop in a new, untested cultivar

### What I am suggesting

Increased exploration of demonstrated locally adapted cultivars can lead to resilient, reliable tree fruit production



### Historic varieties

- Red Astrachan
  - From Russia, brought to England in about 1816, planted in Heber valley in late 1800s
- Yellow Transparent
  - From Russia, imported by USDA in 1870, planted in Heber valley in late 1800s



### Historic U

American Golden Pippin (J9)	Hulton (J9)	Sharp's Russett, Neal's, or Roxbury Russet (Hunter, J9, DN1866)
Baldwin (DN1866)	Jonathan (J9)	Spice Apple (Hunter)
Belmont (DN1866)	Keswick Codlin (DN1866)	Sweet Bough (DN1866)
Ben Davis (J9)	Ladys Sweet (J9)	Twenty ounce (DN1866)
Canada Rennette [Reinette] (J9)	Lake (J9)	Virginia Greening, Green Winter, or Oregon Greening (DN1866)
Carolina Stripped June (DN1866)	Large Apple from Oregon (DN1866)	Washington (J9)
Clepps Favorite (J9)	Late Wine (J9)	White Winter Pearmain (DN1866)
Cogswell (J9)	Limber Twig (DN1866)	Wine sap (DN1866)
Dutch Musgrove (J9)	Mammoth Pippin (J9)	Woods Sweet (J9)
Early Harvest (DN1866)	McClellan (J9)	Yellow Newton Pippin (DN1866)
Esasapus or Esopus Spitzenburgh (H, J9, DN1866)	Mother (J9)	
Fallawater (DN1866)	Mountain Chief (H, DN1866)	
Fall Golden Pippin (J9)	Northern Spy (J9)	
Fall Strawberry (DN1866)	Porter (DN1866)	
Fall Cheese (DN1866)	Pride of the Valley (Hunter)	
Garretson's Early (J9)	Pumpkin Vine Baldwin (DN1866)	
German Golden Pippin (J9)	Red Astrachan (DN1866)	
German Pippin (J9)	Red Russet (J9)	
Hall Golden Pippin (J9)	Rhode Island Greening (Hunter)	
	Rome Beauty (J9)	
	Sassafras Sweet Strawberry (J9)	

1. Wheeler, E.A.B., (2011). The Solitary Place Shall Be Glad for Them: Understanding and Treating Mormon Pioneer Gardens as Cultural Landscapes. All Graduate Theses and Dissertations, Spring 1920 to Summer 2023. 899 Citing Kane, E.W. (1972). Twelve Mormon homes visited in succession on a journey through Utah to Arizona. Utah: The Mormons, and the West 4. Salt Lake City, UT: Tanner Trust Fund, Univ. of Utah Library

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## Citizen science interest

- Community-based experience can produce data driven, hyper-local recommendations
- To better understand public interest in citizen science projects, please take this survey!

