



iSeaTree



iSeaTree

TreeMama.org

Who am I?



Arielle Simmons-Steffen

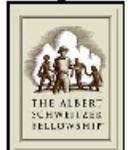
Environmental Planner /
Data Analyst

- MLA Environmental Planning, UC Berkeley ('09)
- Focus: Watershed Restoration & Riparian Vegetation
- Data Driven Planner
- Youth Engagement



Academic Mentor: Prof. Maggi Kelly
Site Mentor: Ina Bendich

Mapping Futures: Environmental Justice in West Oakland



Problem:
A 2005 analysis by the Associated Press of the EPA found that African Americans are 79% more likely than whites to live in neighborhoods where industrial pollution is suspected of posing the greatest health danger. In 2007, the young alleuts of Ina Bendich's 11th-12th grade Law Studies class discovered that their West Oakland school was no exception--by finding toxic metals both inside and outside their classroom. In fact, lead levels in their classroom were 17-54 times greater than the EPA's safe level for indoor areas.

Results:
Question: Do you believe maps have helped you gain a better understanding of the health risks and crime rates in Oakland?

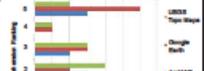



Why Maps?
This was the question every student asked by the time the first assignment came around. However, if you ask them the same question today, Ina and Ari are fairly certain that they will give you something similar to this answer:
"Maps are spatial evidence of the things that we know exist (like air pollution), but can't always prove that they are (or were) there..."
In other words, maps are records. They empower their creators with the ability to see and understand the world in new perspectives. Part of my Schweitzer project was to introduce at-risk high school students to this powerful tool. Mapping helped the students refine their computer and analytical skills. Turning students into cartographer activists!

Site Map



Results:
In May 2009, 13 students from Ina's 5th and 6th period were surveyed and ranked based on their comprehension of the mapping curriculum and software.

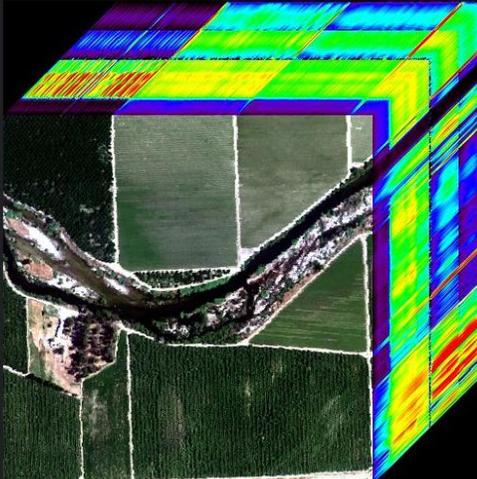


Significant Events:

Spring '07-'08
In Spring 2007, Ina & Co. begin collecting air emissions data using wipe samples and Mini-Vol portable air monitors. They find high concentrations of toxic metals, including lead, cadmium, aluminum, and nickel. In 2008, their findings are widely published, including in Newsweek magazine!!

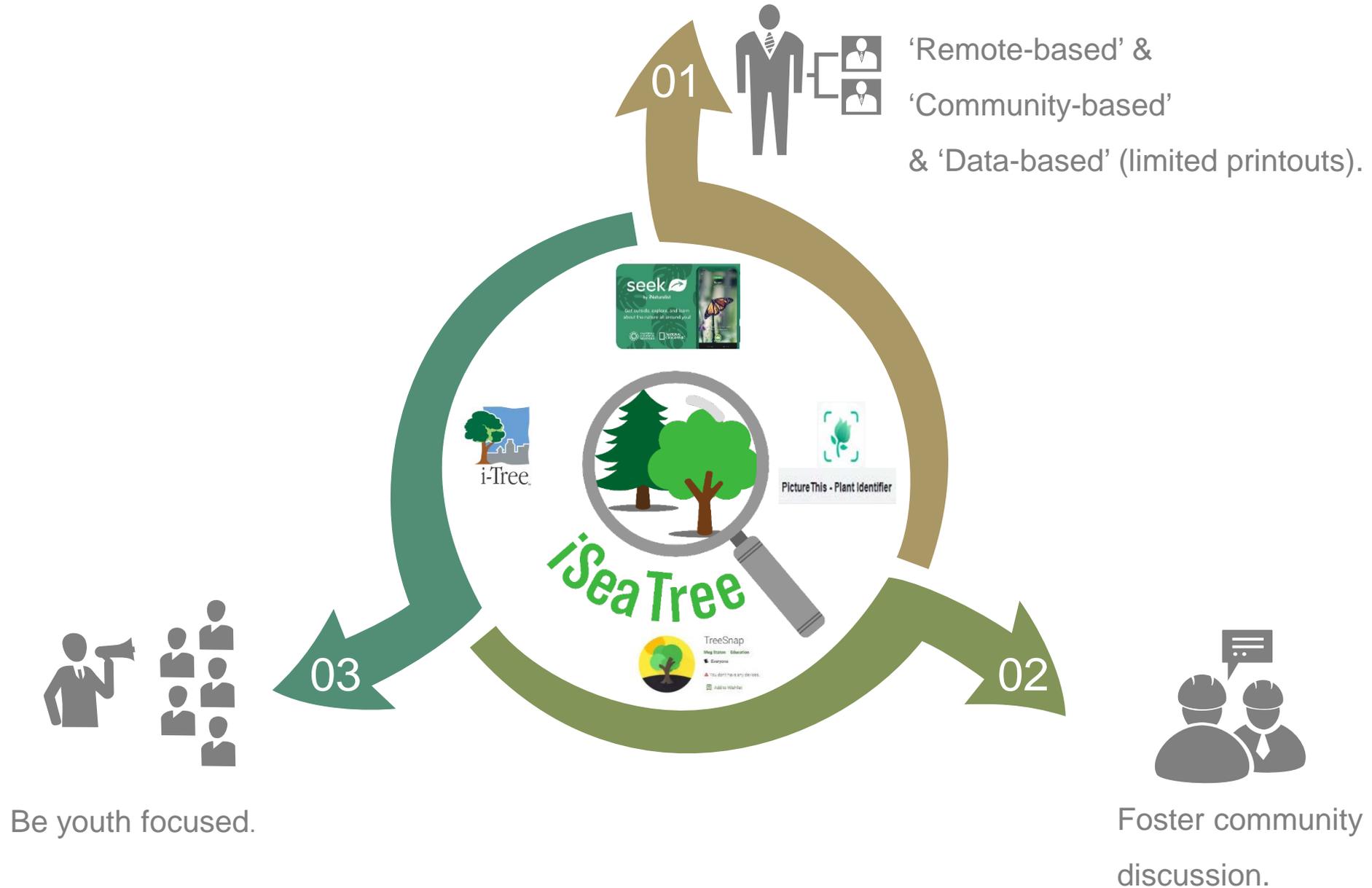
Fall 2008
Coordinating with Elizabeth de Rham, of the Rose Foundation, Ari develops a strategy for teaching the kids how to use ArcMap 9.3--a sophisticated geospatial software program--to map pollution, crime, and healthy food options in their neighborhood. A generous donation of 15 ArcMap licenses is donated from ESRI (roughly \$22,500.00 value).

Spring 2009
Students begin using ArcMap 9.3, Google Earth, and USGS Topo maps to explore and map their neighborhood. Field trips are planned for GPS training at UC Berkeley. Ari and Jennifer Natal investigate creating an interactive pollution tracking model which can display the students work online and be updated by fellow community





'iSeaTree' Development Goals



The Mission



01

Crowd-source,
Community-based
Data Collection.



02

Data is **Accessible**
to the Public.



03

FREE Accessible
Learning for All Ages
(but focus is on
Youth).



04

Make it **Easy**.
Make it **Local**.
Make it **Fun**.

QUOTE

“

You can have data
without information,

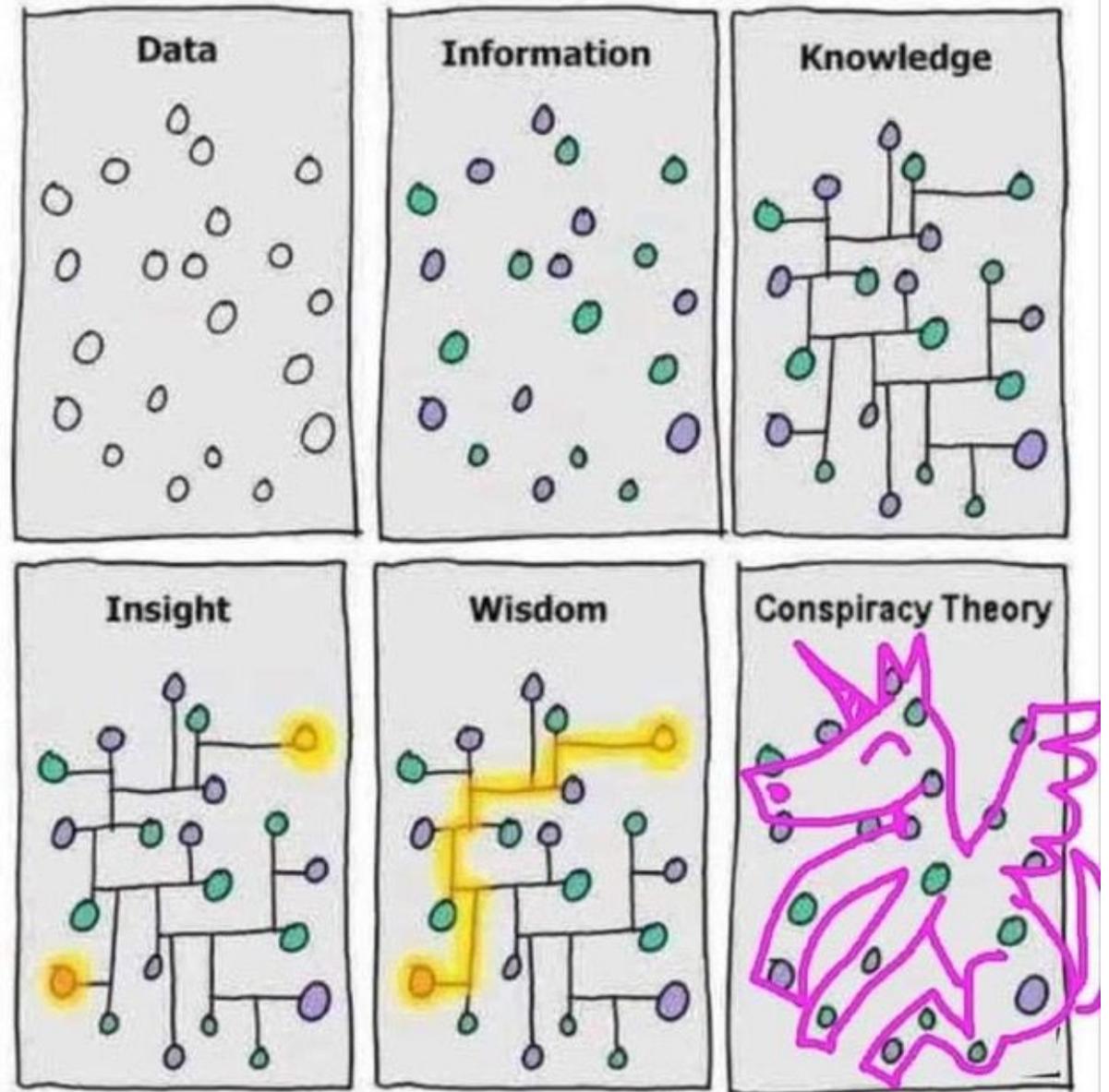
BUT,

you cannot
have information without
data.

- Daniel Keys Moran

”

Data-based Learning

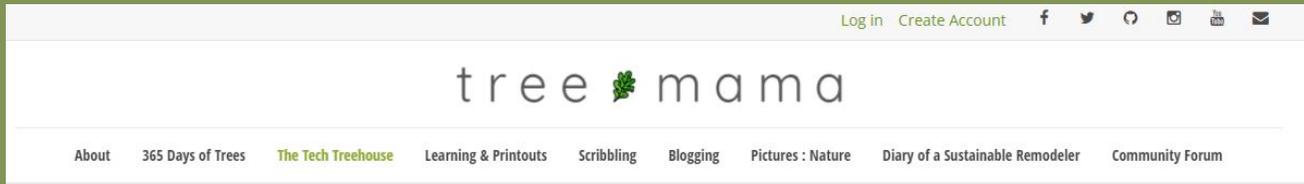




Data Appreciation through Understanding Trees



Tree Appreciation through Understanding Data



Data Analysis Tutorials



Calculate NDVI and LAI
from Sony ARW
SuperBlue filtered
images

■ HIGH SCHOOL/COLLEGE

Birds Of University Terrace Coloring Book – Joe McBride

📅 AUGUST 23, 2020 / 🗺️ ALL AGES, 📍 CA, WA, & OR



These books were designed by [Joe McBride](#), a professor of urban forestry from the University of California, Berkeley. Professor McBride made these books based on birds found in his own local neighborhood. Many of these same species can be found in my own neighborhood in Shoreline, Washington.

Even though I haven't lived in California for many years, it is a heartwarming to still have a piece of home to share with my children. Thank you Professor.

Download Links:

[UT Bird Book](#) | [UT Coloring Book](#)

ENVIRONMENT

Pacific Northwest forests fit trifecta for curbing climate change — if we stop logging them

Study shows trees along the coast and in the Cascade and Olympic mountains have the most potential to sequester carbon.

by Cassandra Proffitt Oregon Public Broadcasting / January 1, 2020



A young woman with long, wavy red hair and freckles is speaking into a blue and white megaphone. She is looking directly at the camera with a focused expression. The background is slightly blurred, showing a sign with a globe icon and the letters 'HOUR'.

**Youth can do
more for science
then just study it
...they can
participate.**



iSeaTree is a free and intuitive mobile application that helps you identify and record tree species anywhere near you in King County (Washington).

Built for all ages and all skill levels, iSeaTree provides key gameplay elements that make it easy and fun for users to have a 'species' scavenger hunt while learning about specific trees.

[READ MORE](#)

REVIEWS

[Review Policy](#)



yxc570

★★★★★ August 4, 2020



Really cool idea for an app that makes taking a walk more fun and helping everyone gain a better understanding of local environment.

**Build Community
during COVID-19
(while still doing
remote-learning).**

PNW Tree Info

1:05 - P

Northern White Cedar



Northern White Cedar Medium

Expert, common in Seattle region - however can be easily mistaken for its native cousin - the Western Red Cedar. Non-Native.

Key Identifiable Attributes:

- Key difference between the Western Red Cedar and the Northern White Cedar is in its size. Western Red Cedar's tend to be much larger (particularly in the Pacific Northwest, where they can grow up to 200 ft tall).
- Leaves are evergreen. The leaves have a pattern

Profile | Suggested | Camera

Game Play

1:12 - P

john.doe
john.doe@gmail.com

Your badges

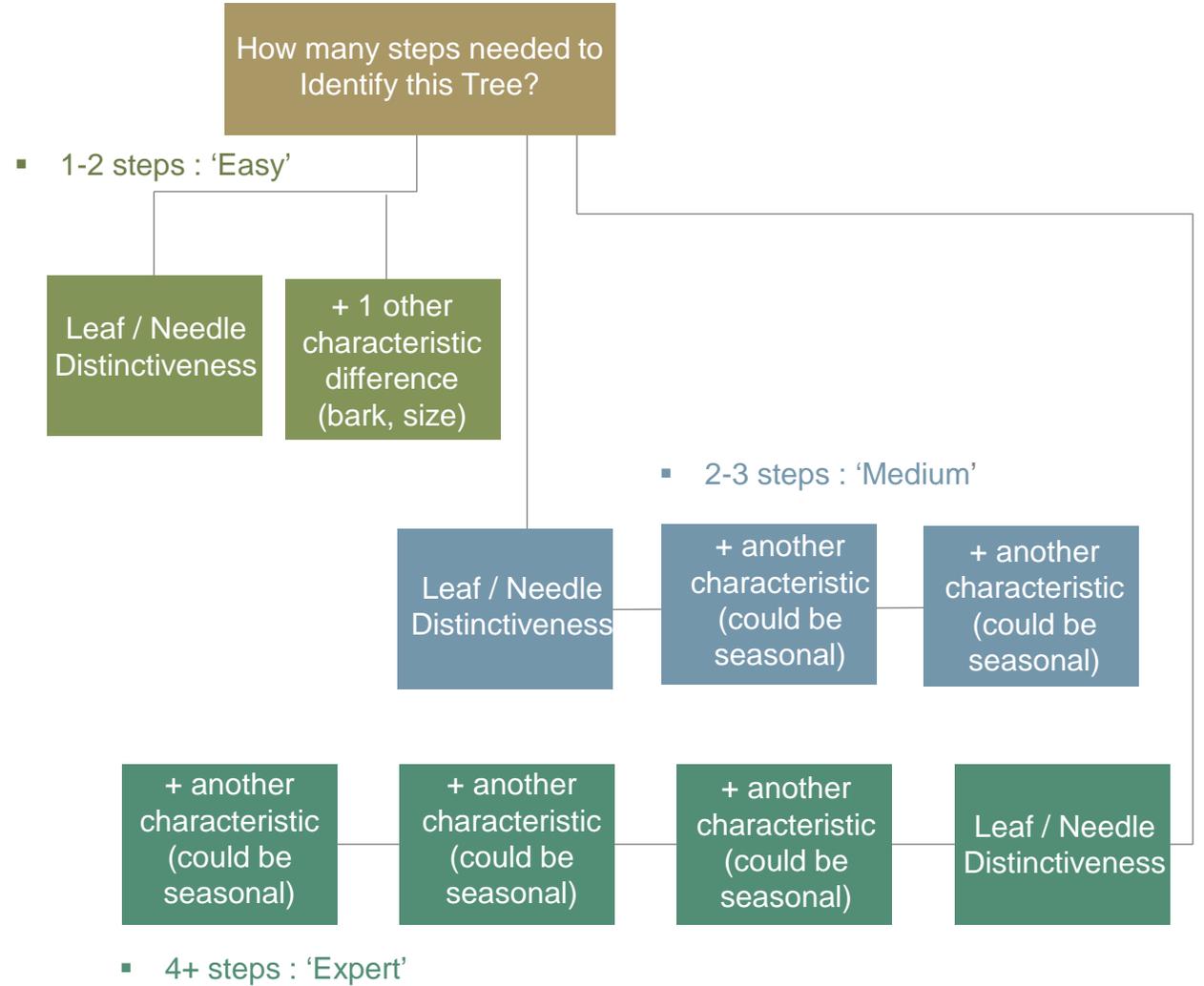




Profile | Camera

Learning Game

McBride Methodology:
 'Start with the leaf/needle...count steps'



Learning Game

Acer – Maple

ID Number:7



COMMON NAME: Vine Maple

TYPE: broadleaf

SCIENTIFIC NAME: *Acer circinatum*IDENTIFICATION DIFFICULTY: **Easy**

TAXA IT MAY BE CONFUSED WITH:

KEY CHARACTERISTICS: leaf palmately lobed with 7 to 11 lobes, almost circular in outline

Abies – True Fir

ID Number: 1



COMMON Name: Pacific Silver Fir

TYPE: conifer

SCIENTIFIC NAME: *Abies amabilis*,IDENTIFICATION DIFFICULTY: **Medium**TAXA IT MAYU BE CONFUSED WITH: *Abies grandis*

KEY CHARACTERISTICS: Ski jump shaped needles; they curve slightly upward in Pacific silver fir and lay flat in Grand fir



Learning Game

Acer – Maple

ID Number:16

COMMON NAME: Norway Maple

TYPE: broadleaf

SCIENTIFIC NAME: *Acer platanoides*IDENTIFICATION DIFFICULTY: **Expert**

TAXA IT MAY BE CONFUSED WITH: Other cultivars of Norway Maple and *Acer saccharum*. Leaves of Norway Maple are slightly broader than those of sugar maple.

KEY CHARACTERISTICS: Leaf blade width is greater than its height, giving the leaf blade a broad appearance

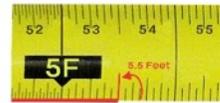


In-App Remote Learning

- 3 Wrap a fabric measuring tape around the trunk at this height.
If using a string follow the same directions as above. Wrap the string around the trunk making sure to keep your fingers on the location where the beginning and end of the string come together.



- 4 Note the tree's circumference from the measuring tape or measure the length of the string to find the circumference of the tree.
* If the ground is sloped, measure 4 1/2 ft (1.4 m) from ground level on the uphill side, mark the spot, then do the same on the downhill side. The average breast height is the midpoint between the uphill and downhill measurements.
** For a trunk that forks at a height less than 4 1/2 ft, measure the circumference just below the fork.



String

- 5 Convert the circumference measure to diameter by dividing by pi (3.14)

$$\frac{5.5}{3.14} = 1.75 \text{ inches}$$

For multi-stemmed trees, repeat steps 1-4 for each stem and add all circumferences together.
Convert the total circumference to diameter by dividing by pi (3.14).

Classroom-free Engagement



iSeaTree

Learning as an Individual

Palmately



Compound

Twentieth Tree

20

Entered

Acorn



Challenge

Haploxyton Pine



5 Fascicles

Learning as a Community



Watershed



Challenge

Map



Validator!

...data captured by the iSeaTree platform. If you do not see your tree shown in this dashboard, that is because it is currently under QA ...the entry fits our community standards. Please check back again.

...of trees are recorded, but not displayed, on

...trees

Participation Mapping www.TreeMama.org

Number of Broadleaf

12

Show all

The map interface displays a street grid with several tree icons. A popup window for a specific tree provides the following details:

- is Valid ?
- Species Name (Common):** Horse Chestnut
- Species Name (Scientific):** Aesculus hippocastanum
- Tree Type:** conifer
- DBH:** 32
- Username:** jwalseth
- Is Validated:** NEEDS VALIDATION
- Land Use Category:** Single-family residential
- Location Type:** Public Property
- Created at:** Saturday, May 23, 2020 9:03 AM
- Notes:** null

Community Discussion www.TreeMama.org

The screenshot shows the TreeMama website interface. At the top, there are navigation links for 'Tree Map!', 'iSeaTree App!', and a banner for 'National Day of Civic Hacking (09/12/20)'. The main navigation bar includes 'About', '365 Days of Trees', 'The Tech Treehouse', 'Learning & Printouts', 'Scribbling', 'Blogging', 'Pictures : Nature', 'Diary of a Sustainable Remodeler', 'Community Forum', and 'Family'. Below this is a secondary navigation bar with 'Forums', 'Members', 'Recent Posts', 'My Profile', and 'Logout'. The main content area is titled 'TreeMama Forum' and features a 'Topics' section with a list of forum posts. The posts include titles like 'Need ID - Conifer in Shoreline (Twin Pond Parks)' and 'Need tree ID - Conifer in Shoreline, Twin Pond Parks', along with details on replies, views, and dates. A 'WELCOME TO OUR COMMUNITY FORUM!' message is also visible on the right side of the forum page.

Log out      

Join us for the **National Day of Civic Hacking (09/12/20)**

[Tree Map!](#) [iSeaTree App!](#)

tree  mama

[About](#) [365 Days of Trees](#) [The Tech Treehouse](#) [Learning & Printouts](#) [Scribbling](#) [Blogging](#) [Pictures : Nature](#) [Diary of a Sustainable Remodeler](#) [Community Forum](#) [Family](#)

[Forums](#) [Members](#) [Recent Posts](#) [My Profile](#) [Logout](#)  

Forums >

TreeMama Forum

 Unread Posts

Topics

[Forums](#)     [Add topic](#)

Status	Topics	Forum	Replies	Views	Users	Date
	Need ID - Conifer in Shoreline (Twin Pond Parks) tree, conifer, Thuja plicata, Western Red Cedar		1	5		Aug 08
	Need tree ID - Conifer in Shoreline, Twin Pond Parks tree, conifer, Pseudotsuga menziesii, Douglas-Fir		1	4		Aug 08
	Need Tree ID help, Ballard (Seattle) tree, conifer		0	0		Jul 30
	Need Identification for conifer, Shoreline tree, conifer		0	0		Jul 30
	Need Tree ID Help, Ballard (Seattle) tree, conifer		0	0		Jul 30
	Need help identifying this conifer in Shoreline					

WELCOME TO OUR COMMUNITY FORUM!

Come in and participate if you have anything you'd like to discuss and/or would like to find help on. Our only ask is that you focus on maintaining civil and supportive discussions. Inappropriate comments and posts are always eligible to be flagged and removed. Please [contact the site admin](#) if you have any concerns.

LATEST THREADS

[Need tree ID - Conifer in Shoreline, Twin Pond Parks](#)
By [treemama_admin](#), 4 weeks ago

[Need ID - Conifer in Shoreline \(Twin Pond Parks\)](#)
By [treemama_admin](#), 4 weeks ago

[Need Tree ID help, Ballard \(Seattle\)](#)
By [treemama_admin](#), 4 weeks ago

PNW COMMUNITY TREE EXPERTS

Using the iTree API

<https://www.itreetools.org/about>
<https://mytree.itreetools.org/#/>

Tell us about your tree:

**These fields are required.*

Location*
 Nearby Address: 1 Muir Woods Rd, Mill Valley, CA 94941, USA
 Lat: 37.89288 Lng: -122.57247

Project or Group Name

Type of Tree
 Select a Type

Tree Species (type to search)*
 Western white pine

Common

Tree Condition*
 Good

Trunk Size (in.)*
 48

Diameter

Sun Exposure*
 Full Partial Shade

Is tree within 60 feet of a building?
 Yes No

1:08

Calculated Tree Benefits

Northern White Cedar (*Thuja occidentalis*)

This feature is currently under active development and will be made available in a future beta release

Carbon Dioxide (CO₂) Sequestered	US\$0.00
Storm Water Runoff Avoided	< \$0.10
Air Pollution Removed Each Year	US\$0.00
Energy Usage Per Year	US\$0.00
Avoided Energy Emissions	US\$0.00

MyTree Benefits

Western white pine, (*Pinus monticola*)

Serving Size: 48.00 in. diameter
 Condition: Good
 Total benefits for this year: \$19.72

Carbon Dioxide (CO₂) Sequestered	\$17.18
Annual CO ₂ equivalent of carbon ¹	738.58 lbs
Storm Water Runoff Avoided	\$2.54
Runoff Avoided	284.02 gal
Rainfall Intercepted	1,406.59 gal
Air Pollution Removed Each Year	\$0.00
Carbon Monoxide	0.67 oz
Ozone	13.84 oz
Nitrogen Dioxide	3.28 oz
Sulfur Dioxide	0.41 oz
PM _{2.5}	0.37 oz
CO₂ Stored To Date³	\$436.50
Lifetime CO ₂ equivalent of carbon ³	18,768.6 lbs

Roadmap

V1 (MVP)

- Basic Data Collection Processing Tested and Working
- Simple Game rules in place: 'ID Levels', 'Number of Trees'
- Map Validation Page and Forum are complete \
- V1 Public Release \
- Public Code Release

July 2020

V2

- Educator Outreach
- 'National Day of Civic Hacking' (9/12/20)
- Add Zone Game Rules: 'Watershed Challenge'
- Add K-5 Games: 'Find a Pinecone', 'Find an Acorn'
- Finish 'ID Levels'
- Add iTree API

Sept 2020

V3

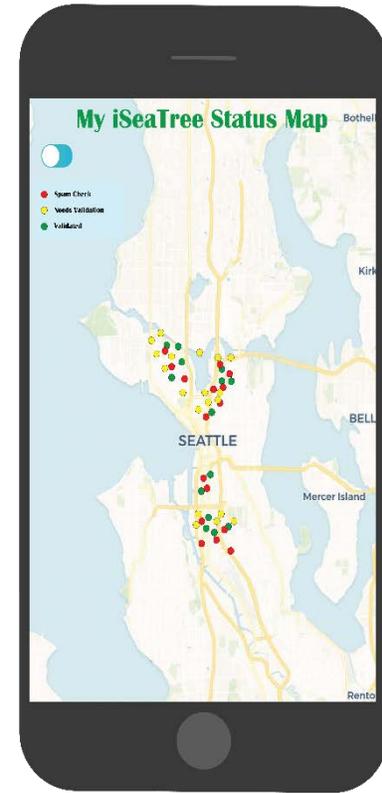
- Educator Outreach / Curriculum Development
- Add Hot Spot Challenge

Winter 2020

V4

- Node.JS / Firebase Upgrade.

Spring 2021



V2 (Map Updates)

ANY QUESTIONS



Any Questions