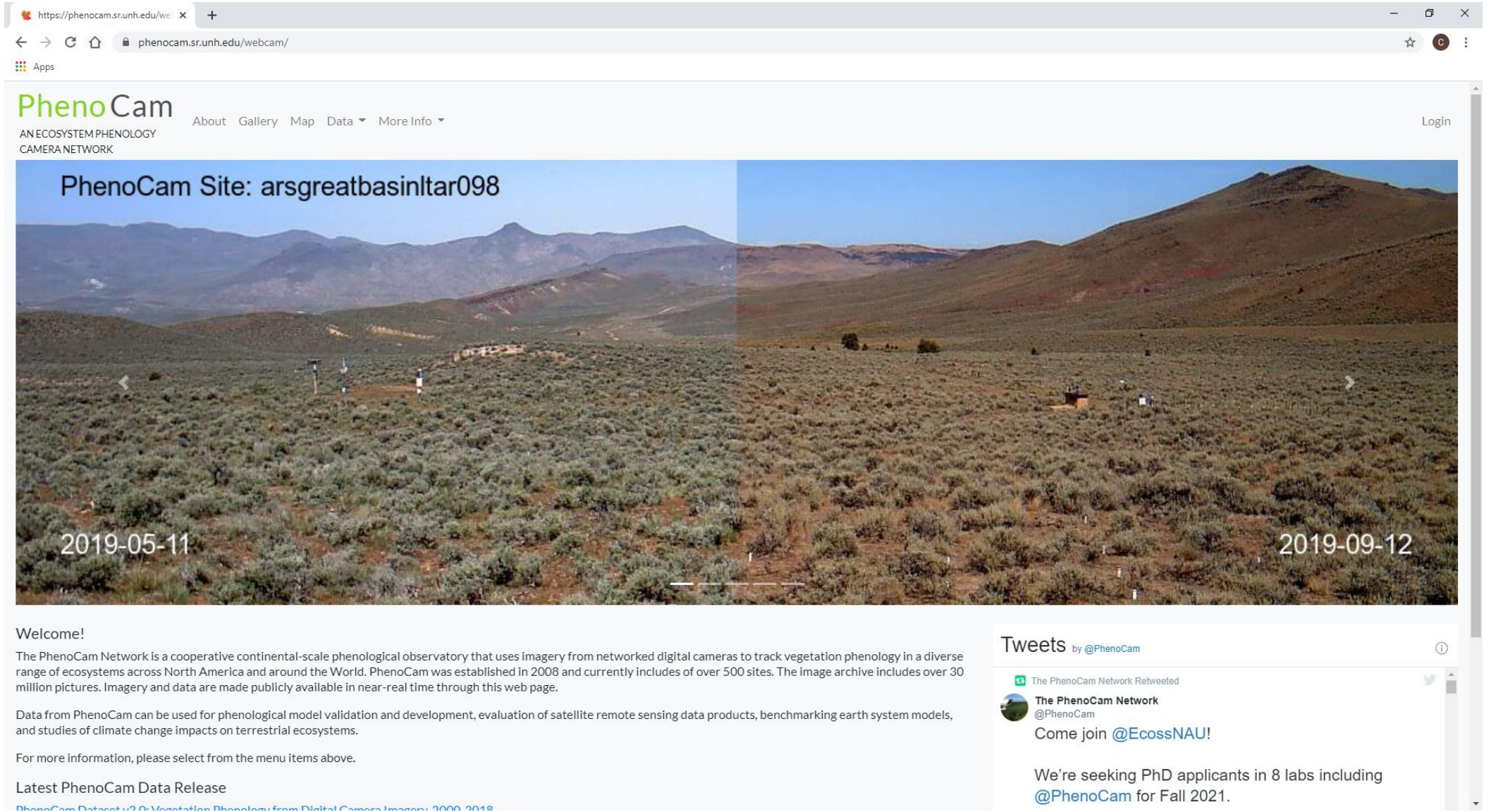
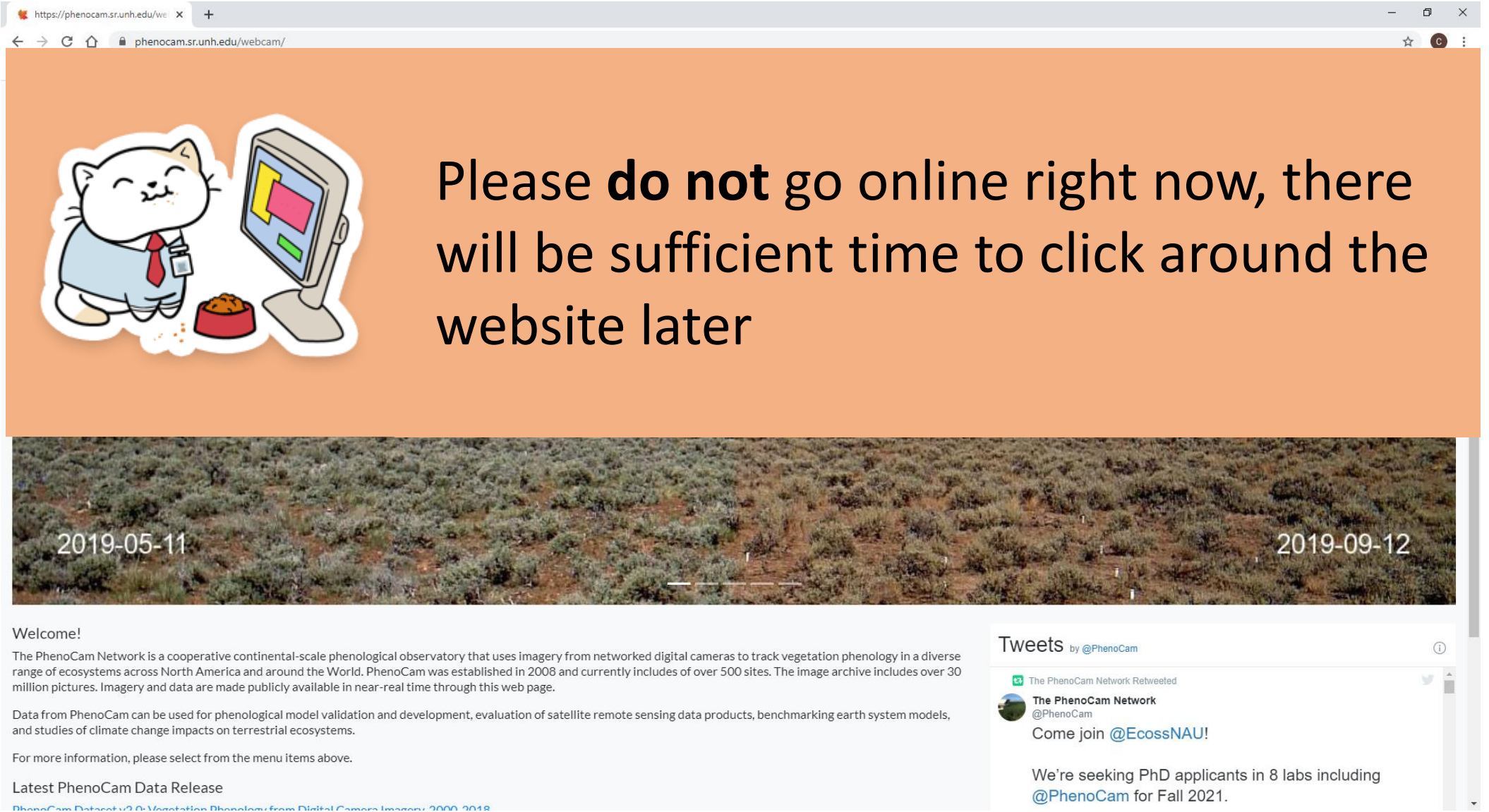
Navigating the PhenoCam Website

https://phenocam.sr.unh.edu/



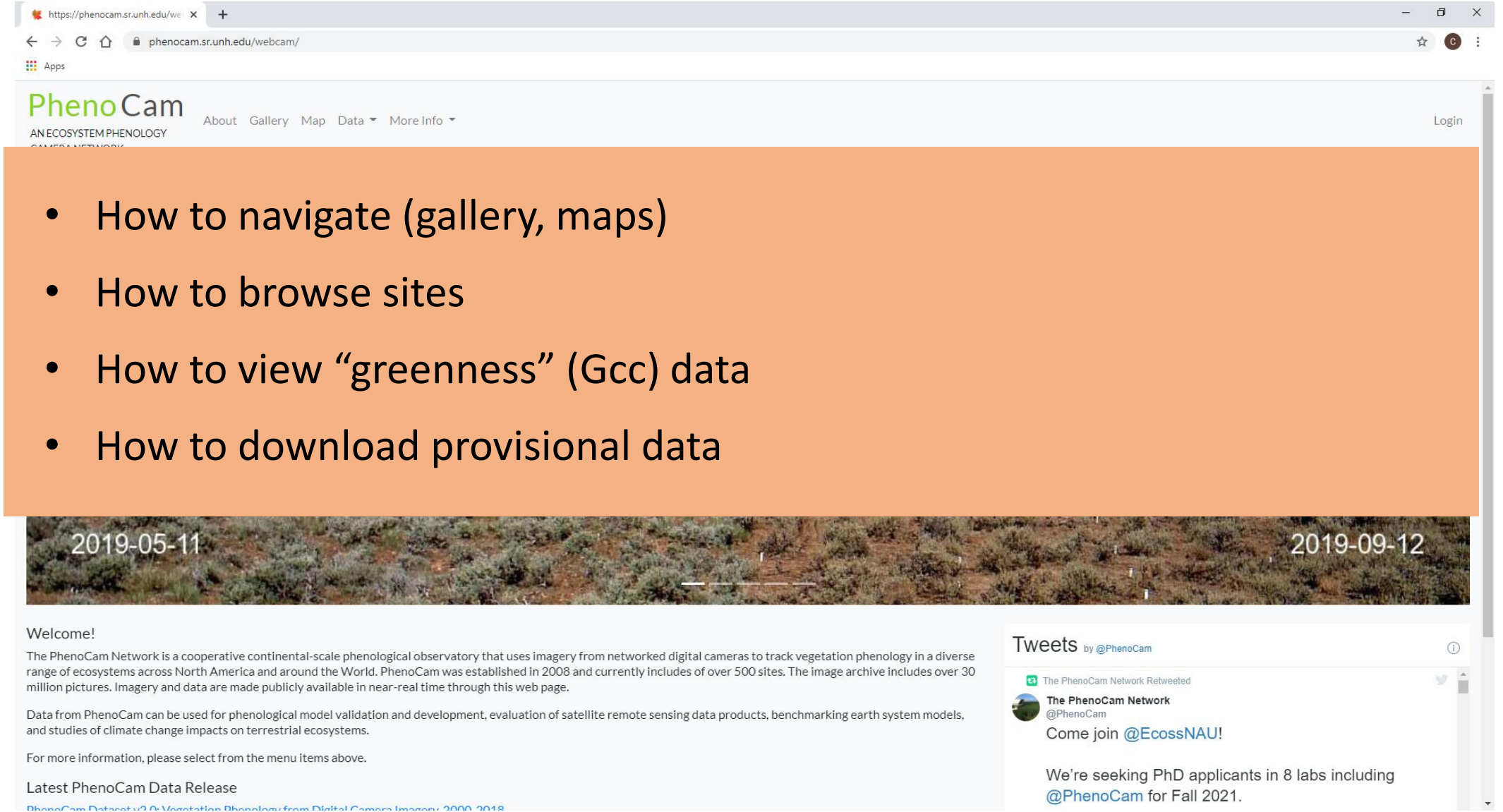
Navigating the PhenoCam Website

https://phenocam.sr.unh.edu/



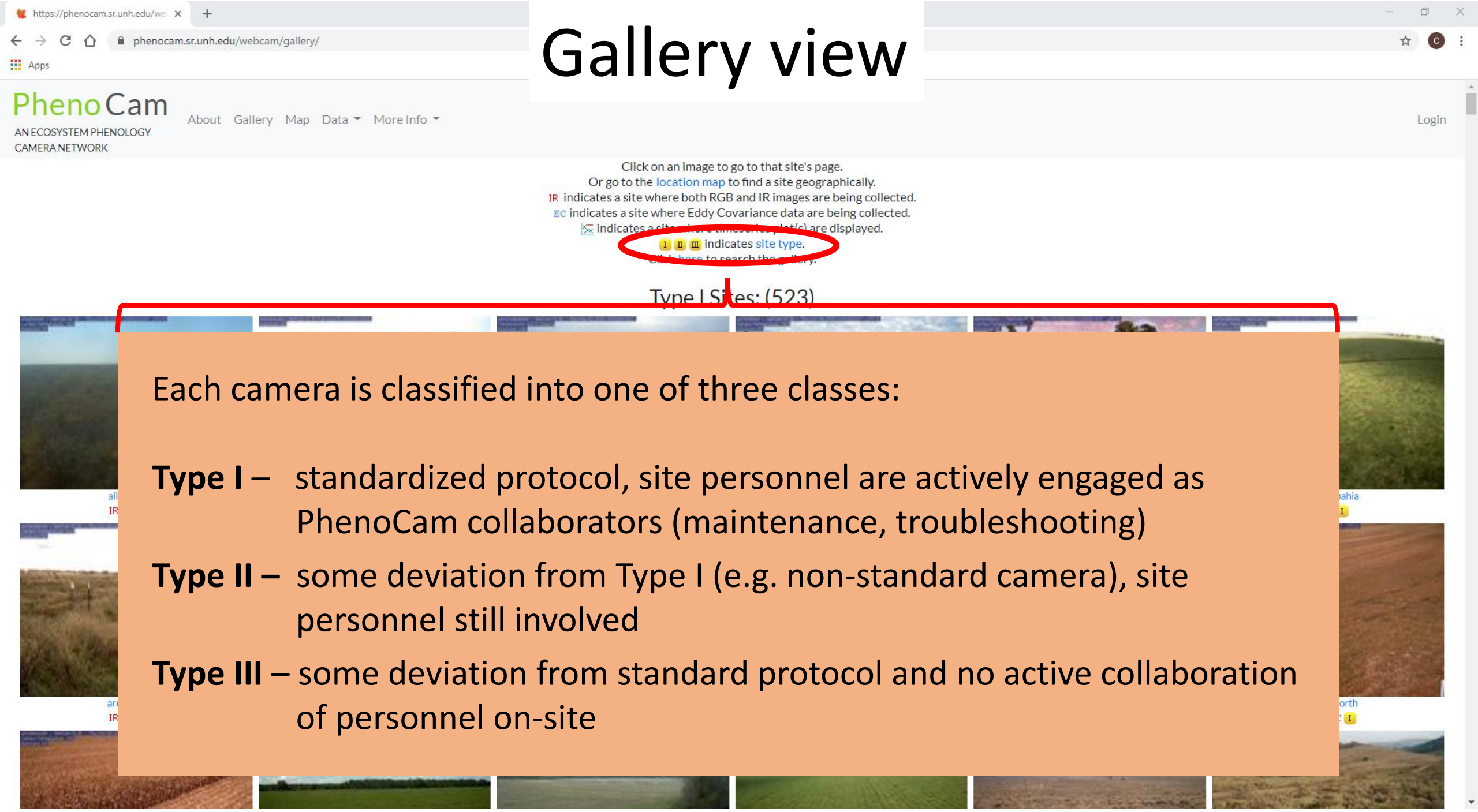
Navigating the PhenoCam Website

https://phenocam.sr.unh.edu/



- How to navigate (gallery, maps)
- How to browse sites
- How to view "greenness" (Gcc) data
- How to download provisional data

Gallery view

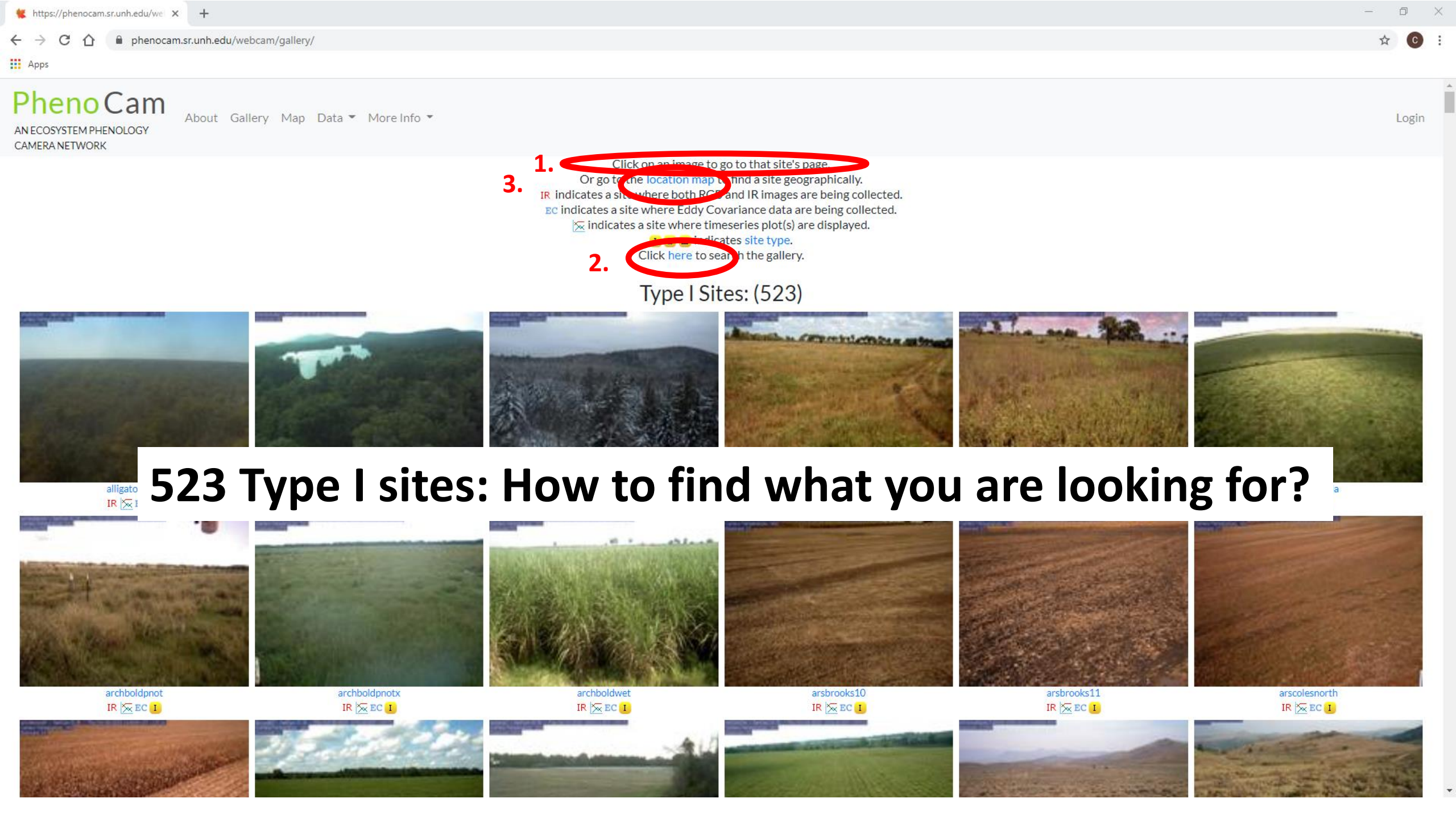


Each camera is classified into one of three classes:

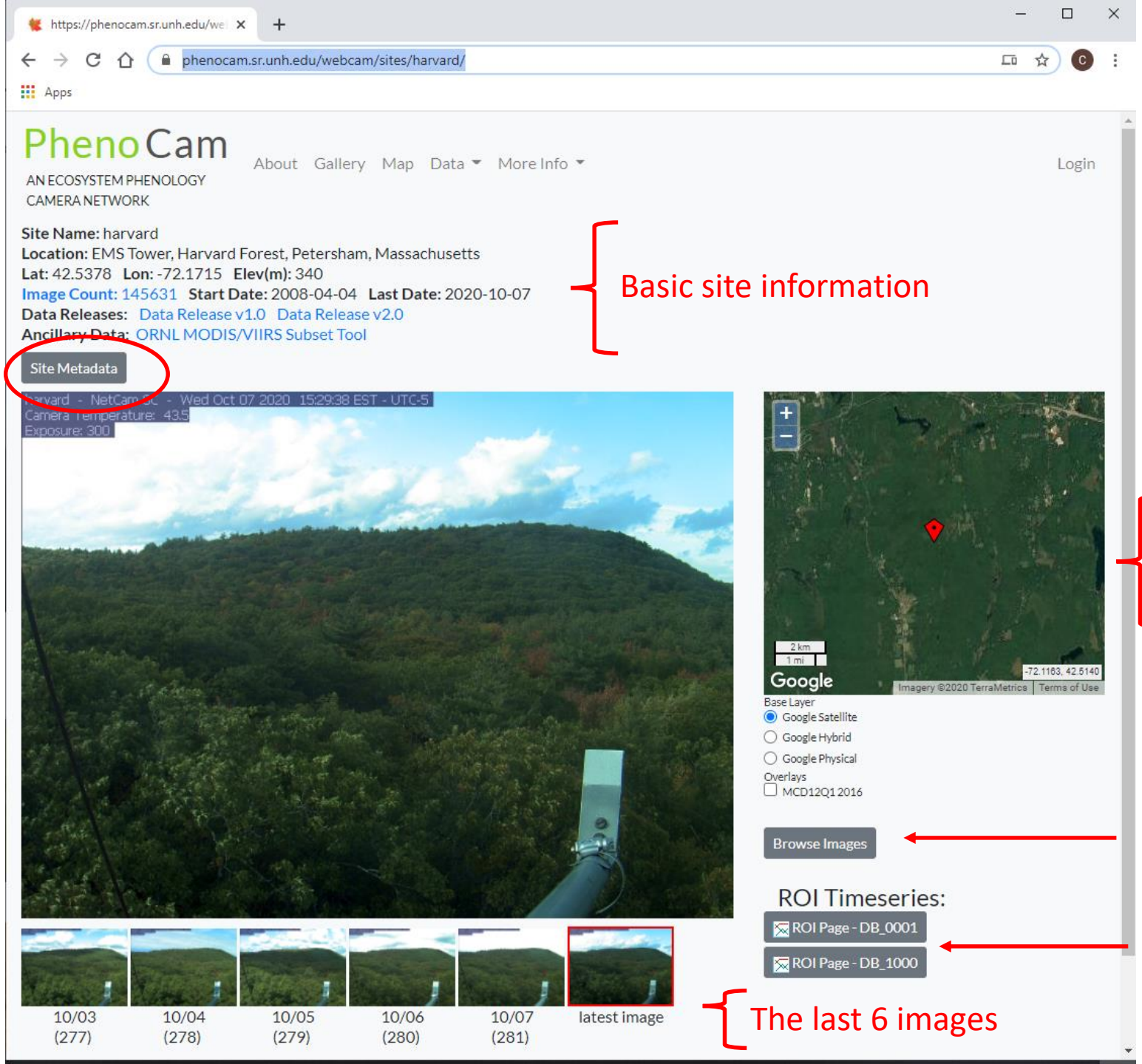
Type I – standardized protocol, site personnel are actively engaged as PhenoCam collaborators (maintenance, troubleshooting)

Type II – some deviation from Type I (e.g. non-standard camera), site personnel still involved

Type III – some deviation from standard protocol and no active collaboration of personnel on-site


https://phenocam.sr.unh.edu/we
phenocam.sr.unh.edu/webcam/gallery/
Apps
PhenoCam
AN ECOSYSTEM PHENOLOGY CAMERA NETWORK
About
Gallery
Map
Data
More Info
Login
1.
Click on an image to go to that site's page.
3.
Or go to the location map to find a site geographically.
IR indicates a site where both RGB and IR images are being collected.
EC indicates a site where Eddy Covariance data are being collected.
indicates a site where timeseries plot(s) are displayed.
indicates site type.
2.
Click here to search the gallery.
Type I Sites: (523)
523 Type I sites: How to find what you are looking for?
alligato
IR
archboldpnot
IR EC I
archboldpnotx
IR EC I
archboldwet
IR EC I
arsbrooks10
IR EC I
arsbrooks11
IR EC I
arscolesnorth
IR EC I

1. Click on an image



Basic site information

The exact location with a zoomable map

All images to browse

Timeseries for the different regions of interest (ROI)

The last 6 images

Site Metadata

https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/sites/harvard/

Apps

PhenoCam

AN ECOSYSTEM PHENOLOGY CAMERA NETWORK

About Gallery Map Data More Info Login

Site Name: harvard
Location: EMS Tower, Harvard Forest, Petersham, Massachusetts
Lat: 42.5378 **Lon:** -72.1715 **Elev(m):** 340
Image Count: 145631 **Start Date:** 2008-04-04 **Last Date:** 2020-10-07
Data Releases: Data Release v1.0 Data Release v2.0
Ancillary Data: ORNL MODIS/VIIRS Subset Tool

Site Metadata

Group: PhenoCam AMERIFLUX
Camera Description: StarDot NetCam SC
Camera Orientation: N
Site Contacts:
Andrew Richardson <andrew DOT richardson AT nau DOT edu>
Bill Munger <jwmunger AT seas DOT harvard DOT edu>
UTC Offset: -5
Site Type: I
Site Meteorology: True
MAT_site: 8.0
MAP_site: 1250.0
MAT_daymet: 7.15
MAP_daymet: 1352.0
MAT_worldclim: 6.8
MAP_worldclim: 1139.0
Flux Data: True
Flux Networks: AMERIFLUX
Flux Sitenames: US-Ha1
dominant_species: Quercus rubra, Acer rubrum, Pinus strobus
primary_veg_type: DB
secondary_veg_type: EN
north_america_ecoregion: 5
wwf_biome: 4
koeppen_geiger: Dfb
landcover_igbp: 5
site_notes:

site_acknowledgements:
The Harvard EMS site is supported is an AmeriFlux core site supported by the AmeriFlux Management Project with funding by the U.S. Department of Energy's Office of Science under Contract No. DE-AC02-05CH11231, and a part of the Harvard Forest LTER site supported by the National Science Foundation (DEB-1237491).

Browse images

https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/browse/harvard/

Apps

PhenoCam
AN ECOSYSTEM PHENOLOGY CAMERA NETWORK

About Gallery Map Data More Info Login

Site Name: harvard
Site Years: 2020 2019 2018 2017 2016 2015 2014 2013 2012 2011 2010 2009 2008

Year: 2020 (top)


Jan (N = 992)


Feb (N = 914)


Mar (N = 1271)


Apr (N = 696)


May (N = 944)


Jun (N = 1128)


Jul (N = 1109)


Aug (N = 1199)


Sep (N = 1172)


Oct (N = 241)

# of images per month

Year: 2019 (top)


Jan (N = 831)


Feb (N = 892)


Mar (N = 961)


Apr (N = 951)


May (N = 977)


Jun (N = 907)


Jul (N = 950)


Aug (N = 948)


Sep (N = 911)


Oct (N = 615)


Nov (N = 857)


Dec (N = 982)

Year: 2018 (top)

Browse October 2018

https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/browse/harvard/2018/10/

Apps

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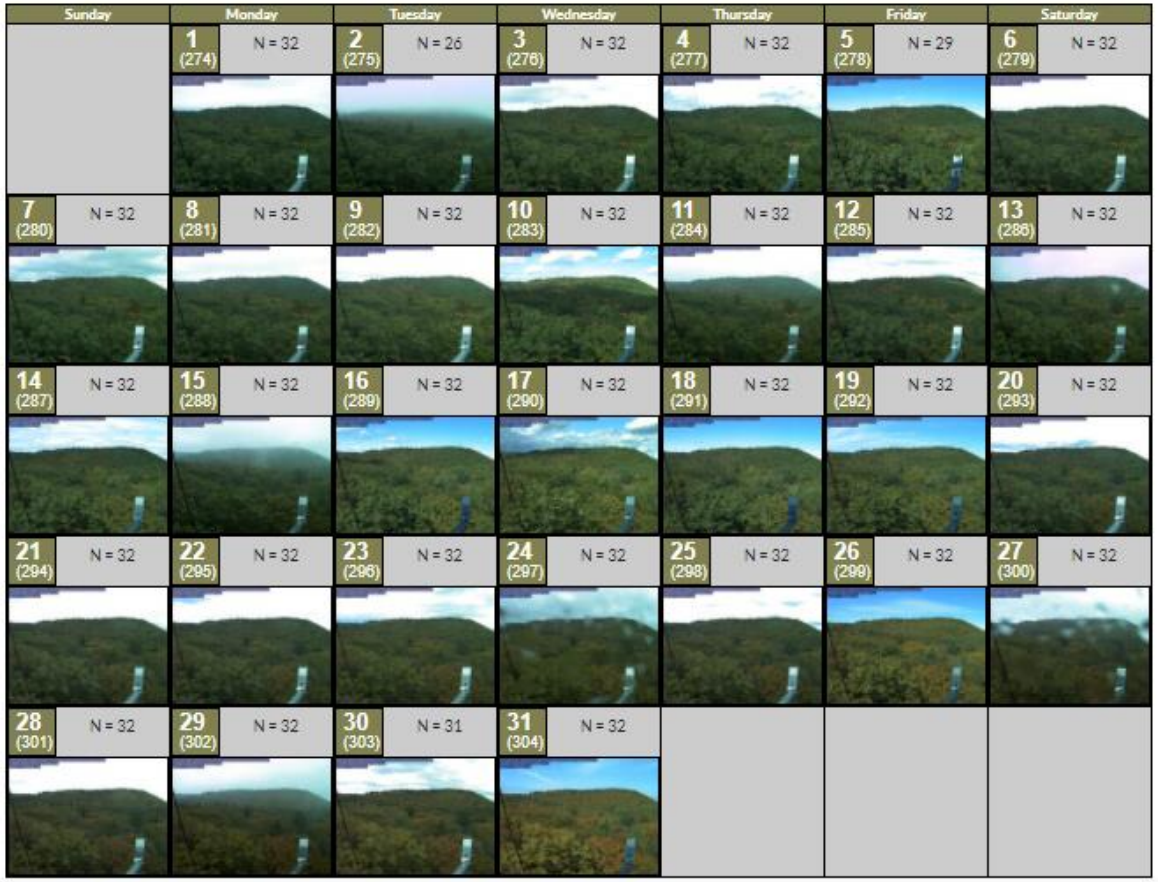
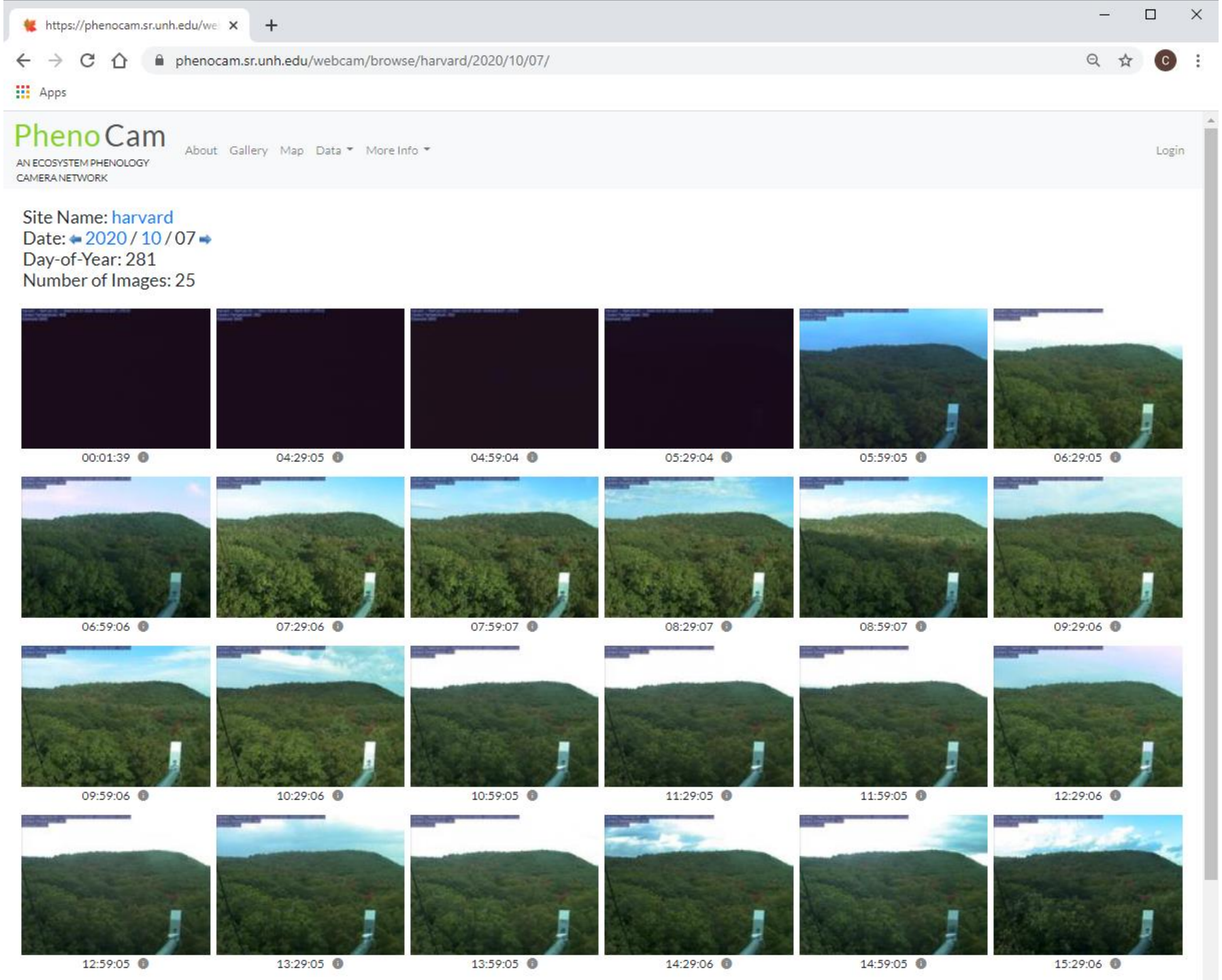
About Gallery Map Data More Info Login

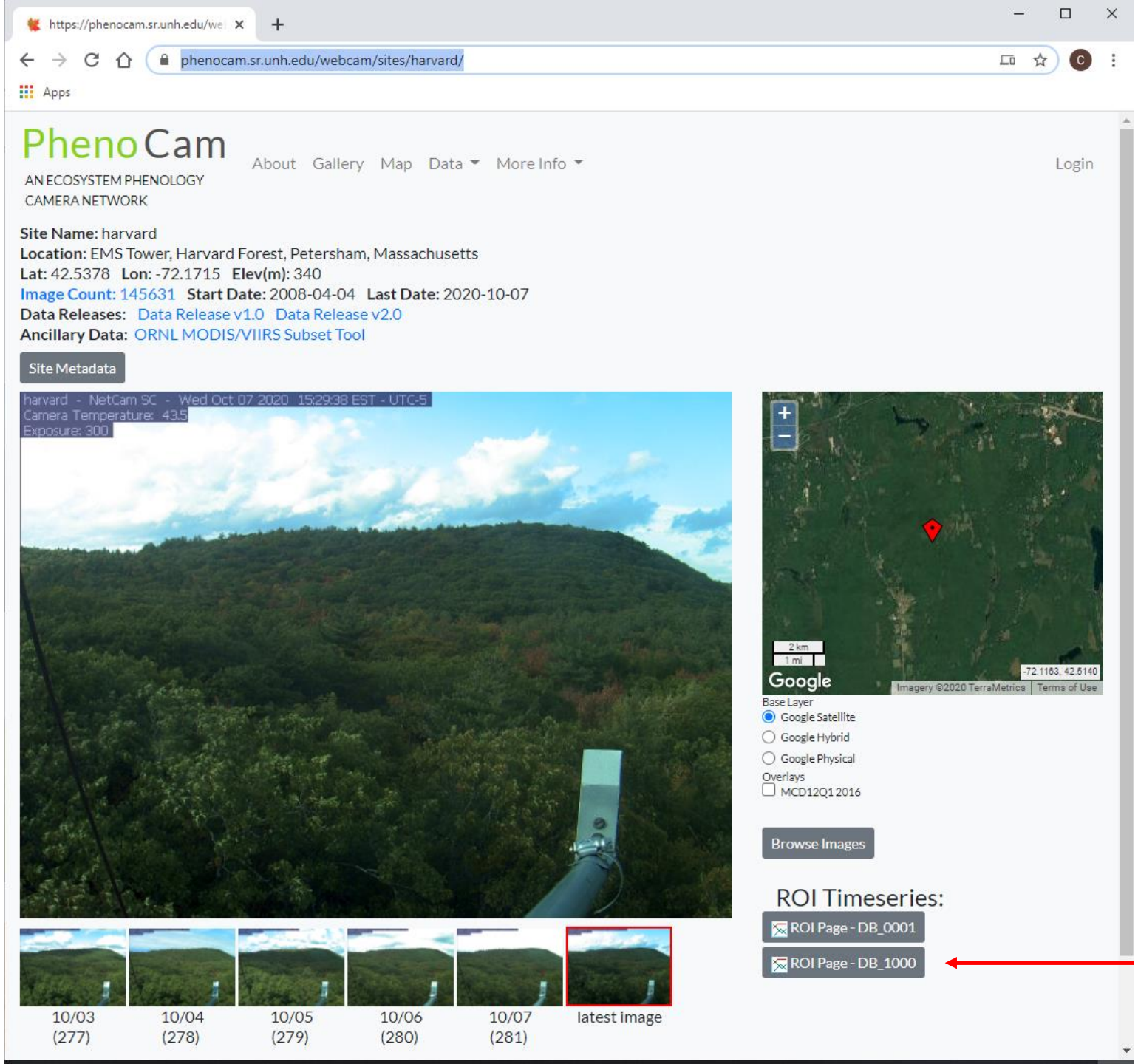
Site Name: harvard
Year: 2018 Month: 10



Browse October 7, 2020



Click on timeseries for different ROIs and plant functional types



Timeseries for the different regions of interest (ROI)

DB = deciduous broadleaf

1000 = unique ROI identifier

Click ROI page DB -1000
DB = deciduous broadleaf

https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/roi/harvard/DB_1000/

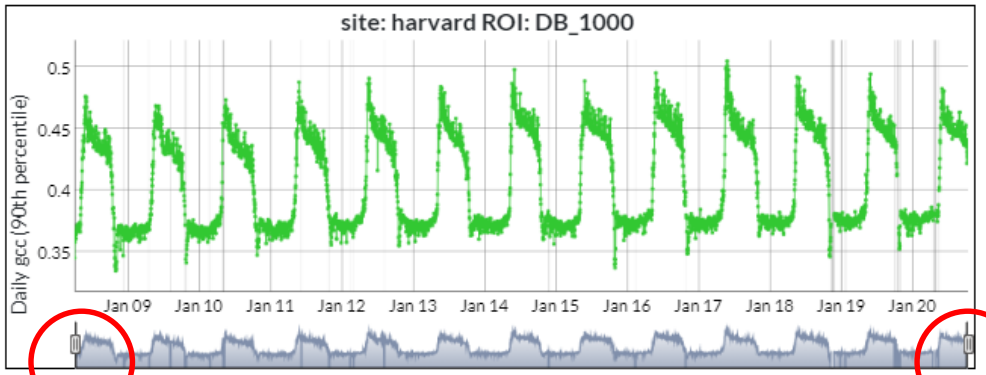
PhenoCam
AN ECOSYSTEM PHENOLOGY CAMERA NETWORK

About Gallery Map Data More Info

Site Name: harvard
Location: EMS Tower, Harvard Forest, Petersham, Massachusetts
Lat:42.5378 **Lon:**-72.1715 **Elev(m):** 340
Image Count: 145836 **Start Date:** 2008-04-04 **Last Date:** 2020-10-13

ROI Name: DB_1000 (Deciduous trees in foreground)

gcc (green chromatic coordinate) timeseries plot



PNG Plot

Levers can be moved back and forth, helps to zoom in on specific years

Provisional Data Links

The data plotted above are available via the links below. This data is provisional and subject to change. For a description of the data files see our tools page. See our fairuse policy for citation information.

Provisional Data

ROI Mask List (1)

(Mask CSV file)

Mask: 1
Start Date: April 4, 2008, midnight
End Date: Dec. 31, 9999, 11:59 p.m.
Mask File: harvard_DB_1000_01.tif

Toggle Mask

Click ROI page DB -1000
DB = deciduous broadleaf

https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/roi/harvard/DB_1000/

PhenoCam
AN ECOSYSTEM PHENOLOGY CAMERA NETWORK

About Gallery Map Data More Info

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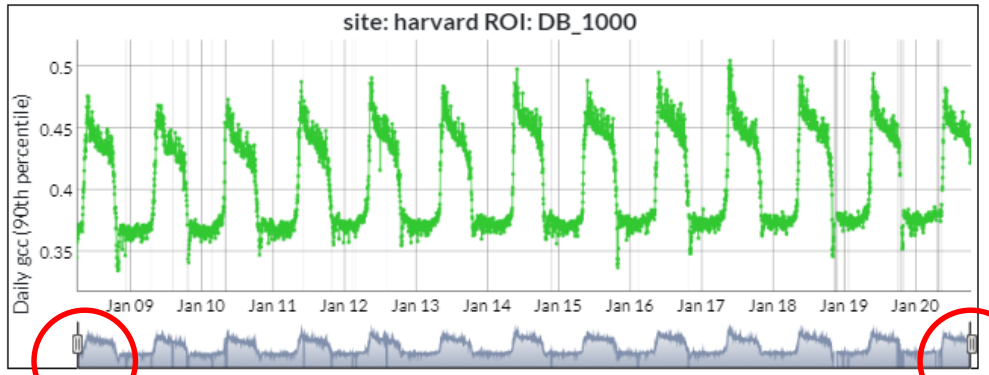

PNG Plot

Levers can be moved back and forth, helps to zoom in on specific years

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Provisional Data

ROI Mask List (1)

(Mask CSV file)

Mask: 1
Start Date: April 4, 2008, midnight
End Date: Dec. 31, 9999, 11:59 p.m.
Mask File: harvard_DB_1000_01.tif

Toggle Mask

https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/gallery/

Apps

PhenoCam

AN ECOSYSTEM PHENOLOGY CAMERA NETWORK

About Gallery Map Data More Info Login

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EC indicates a site where Eddy Covariance data are being collected.
indicates a site where timeseries plot(s) are displayed.
indicates site type.
Click here to search the gallery.

2.

Type I Sites: (523)






alligato
IR

523 Type I sites: How to find what you are looking for?


archboldpnot
IR EC I


archboldpnotx
IR EC I


archboldwet
IR EC I


arsbrooks10
IR EC I

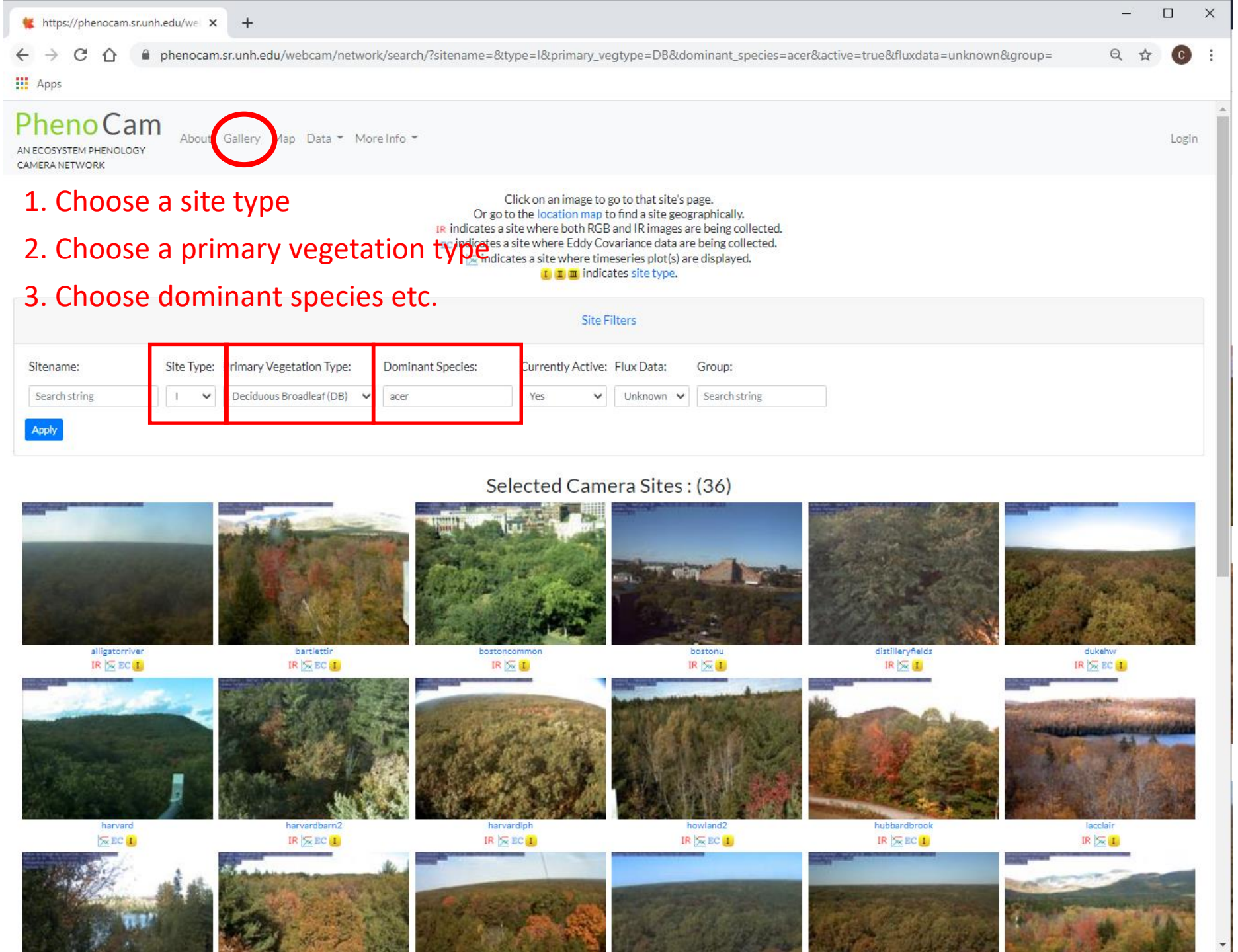

arsbrooks11
IR EC I


arscolesnorth
IR EC I






2. Browse the Gallery



https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/network/search/?sitename=&type=I&primary_vegtype=GR&dominant_species=&active=unknown&fluxdata=unknown&...

Apps

PhenoCam
AN ECOSYSTEM PHENOLOGY CAMERA NETWORK

About Gallery Map Data More Info pheno_educators

Click on an image to go to that site's page.
Or go to the location map to find a site geographically.
IR indicates a site where both RGB and IR images are being collected.
EC indicates a site where Eddy Covariance data are being collected.
indicates a site where timeseries plot(s) are displayed.
indicates site type.

Site Filters

Sitename: Search string

Site Type: I

Primary Vegetation Type: ---------

- ---------
- Agriculture (AG)
- Deciduous Broadleaf (DB)
- Evergreen Broadleaf (EB)
- Evergreen Needleleaf (EN)
- Deciduous Needleleaf (DN)
- Grassland (GR)
- Mixed Forest (MX)
- Non-vegetated (NV)
- Reference Panel (RF)
- Shrub (SH)
- Tundra (TN)
- Understory (UN)
- Wetland (WL)
- Other/Canopy (XX)

Dominant Species:

Currently Active: Unknown

Flux Data: Unknown

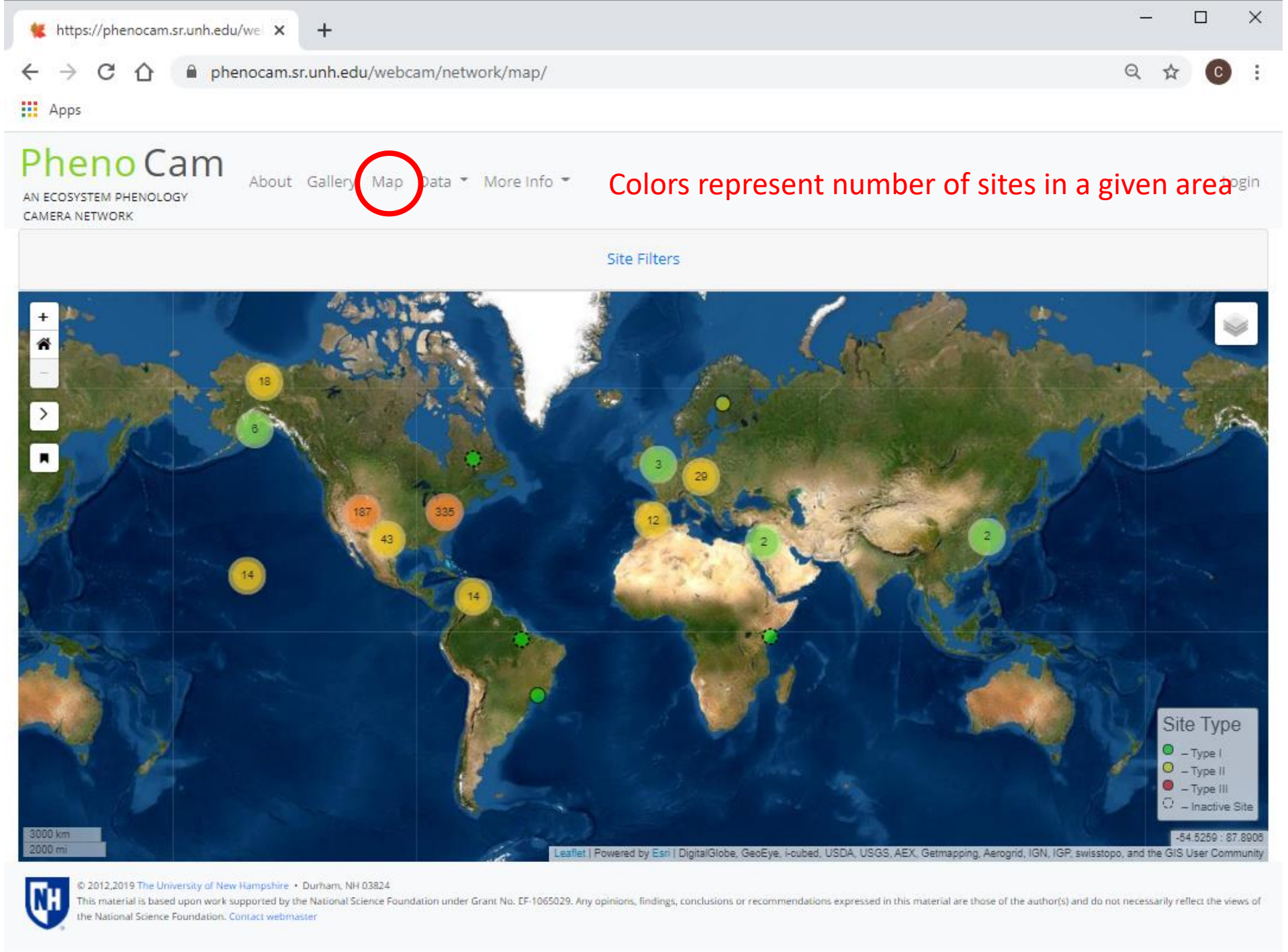
Group: Search string

Apply

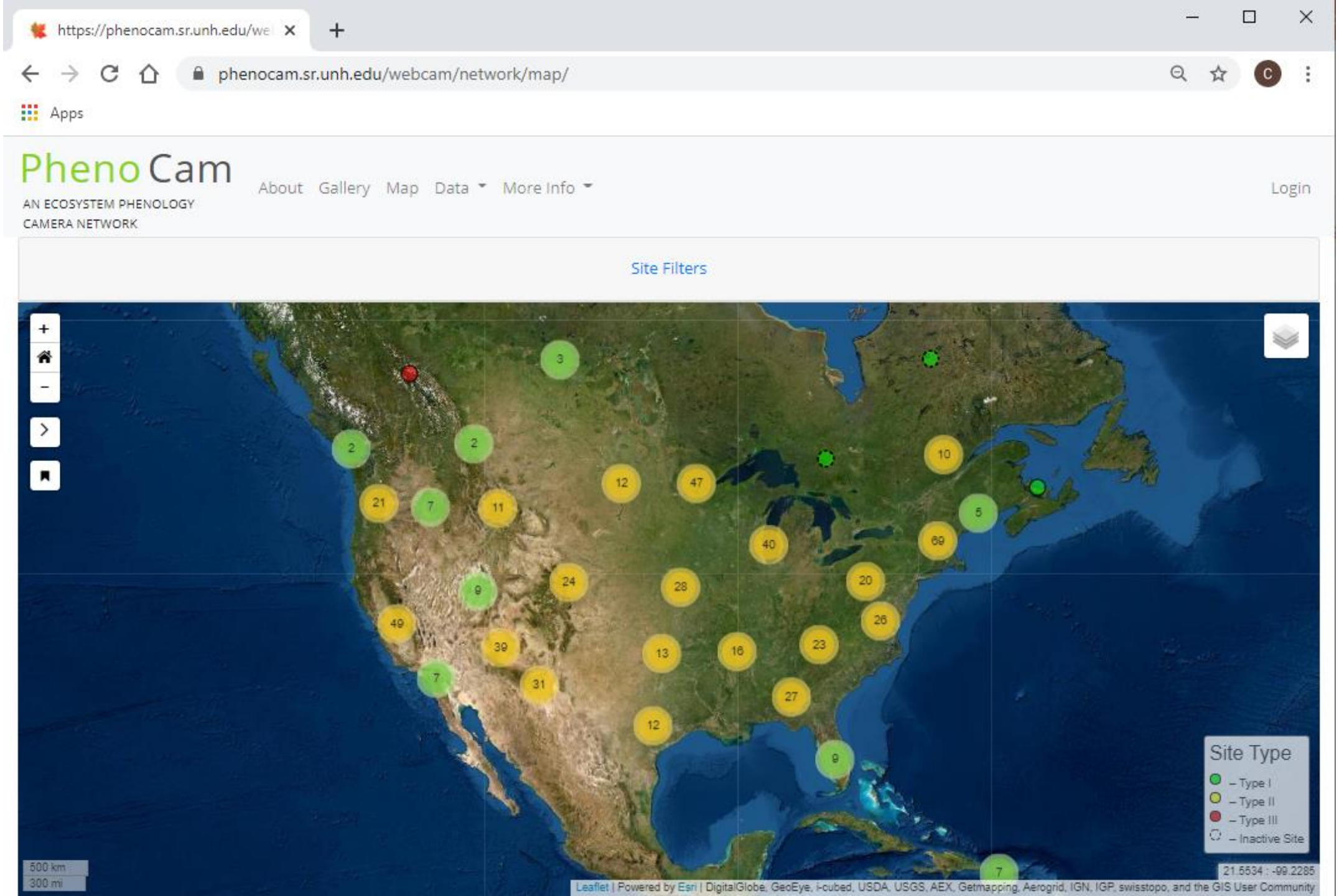
Selected Camera Sites : (84)


archboldbahia
bozeman
butte
cperheavy
cperuvb
csutest
eslm1
eslm2
eslma
forbes
fortpaynealpasture2
freemangrass
grandrivergrass
grandteton
gumpenstein
gumpenstein2

3. Browse the Map

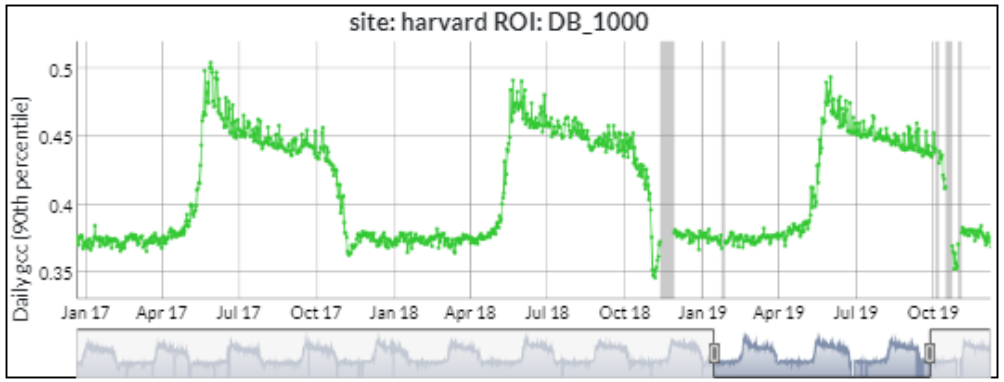


Phenocam locations in the lower 48

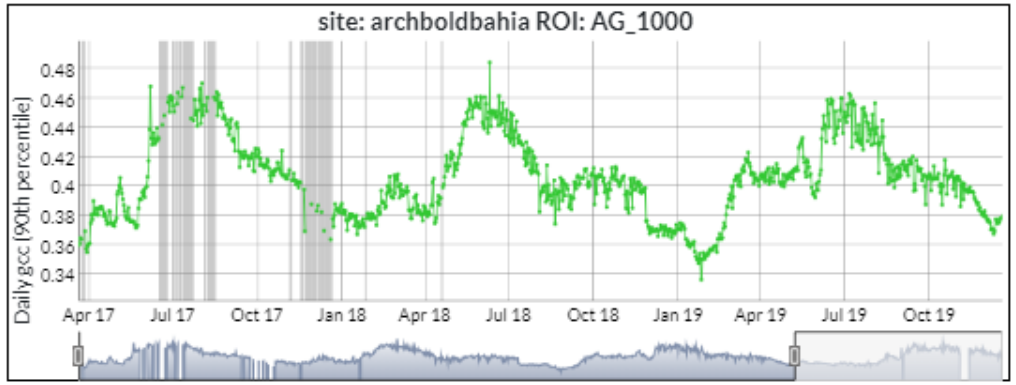


Gcc (green chromatic coordinate) timeseries

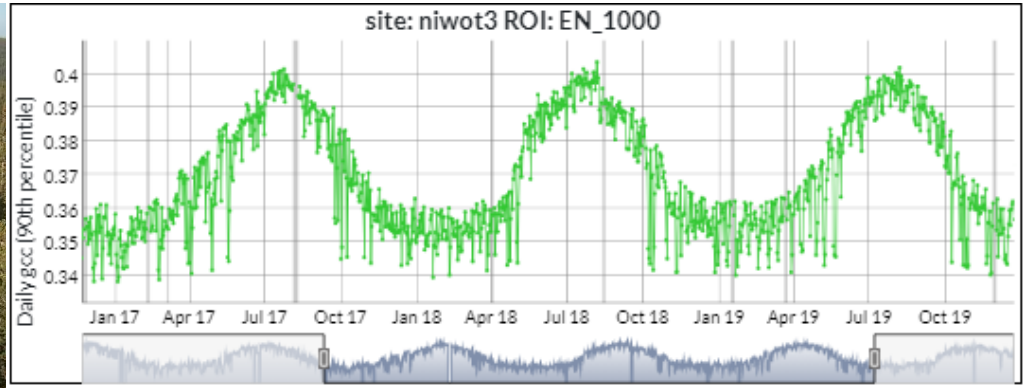
Grey bars in gcc timeseries are gaps (no images) because of network or power outages



Site Name: harvard
Location: EMS Tower, Harvard Forest, Petersham, Massachusetts
Lat:42.5378 **Lon:**-72.1715 **Elev(m):** 340
Image Count: 145631 **Start Date:** 2008-04-04 **Last Date:** 2020-10-07



Site Name: archboldbahia
Location: Archbold Biological Station, Florida, USA
Lat:27.1656 **Lon:**-81.2161 **Elev(m):** 8
Image Count: 37383 **Start Date:** 2017-03-21 **Last Date:** 2020-10-07

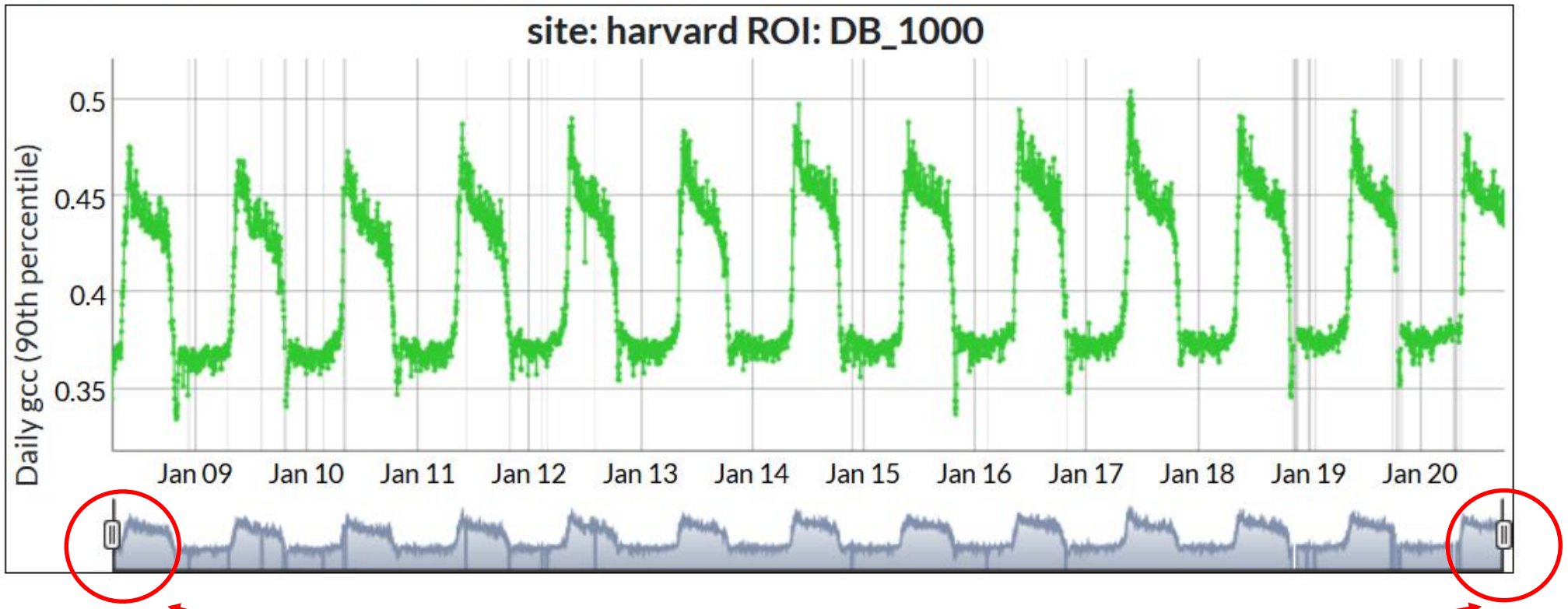


Site Name: niwot3
Location: Niwot Ridge Mountain Research Station, Roosevelt National Forest, Colorado
Lat:40.0329 **Lon:**-105.5470 **Elev(m):** 3050
Image Count: 70430 **Start Date:** 2015-07-16 **Last Date:** 2020-10-07

Site Name: harvard
Location: EMS Tower, Harvard Forest, Petersham, Massachusetts
Lat:42.5378 **Lon:**-72.1715 **Elev(m):** 340
Image Count: 145631 **Start Date:** 2008-04-04 **Last Date:** 2020-10-07

ROI Name: DB_1000 (Deciduous trees in foreground)

gcc (green chromatic coordinate) timeseries plot

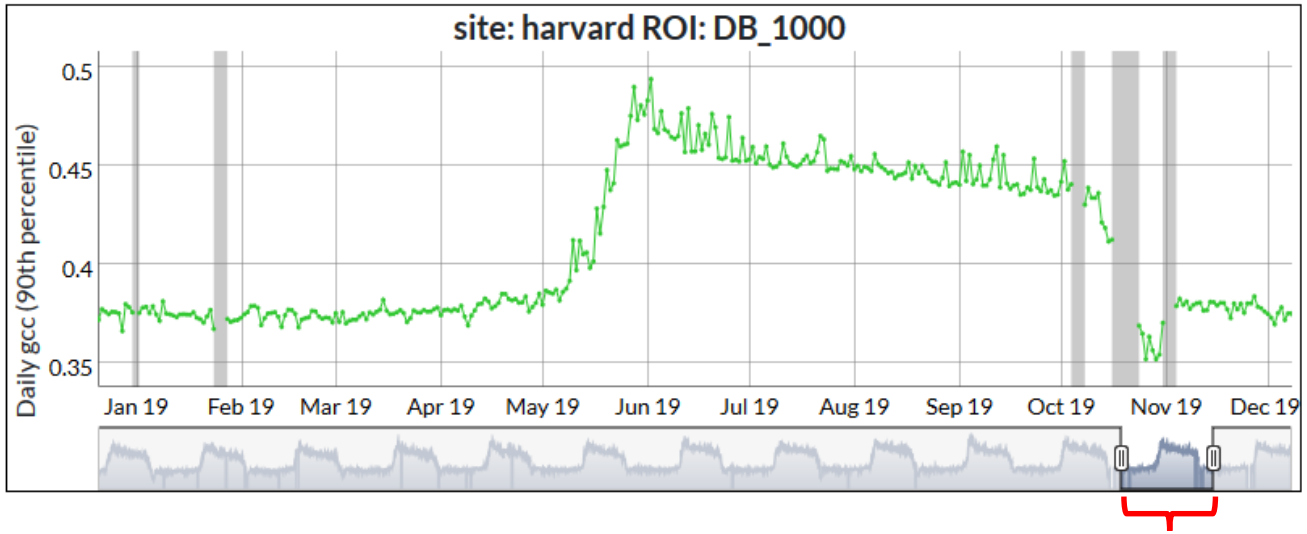


Let's zoom in to one year of data by moving both levers

Site Name: harvard
Location: EMS Tower, Harvard Forest, Petersham, Massachusetts
Lat:42.5378 **Lon:**-72.1715 **Elev(m):** 340
Image Count: 145631 **Start Date:** 2008-04-04 **Last Date:** 2020-10-07

ROI Name: DB_1000 (Deciduous trees in foreground)

gcc (green chromatic coordinate) timeseries plot



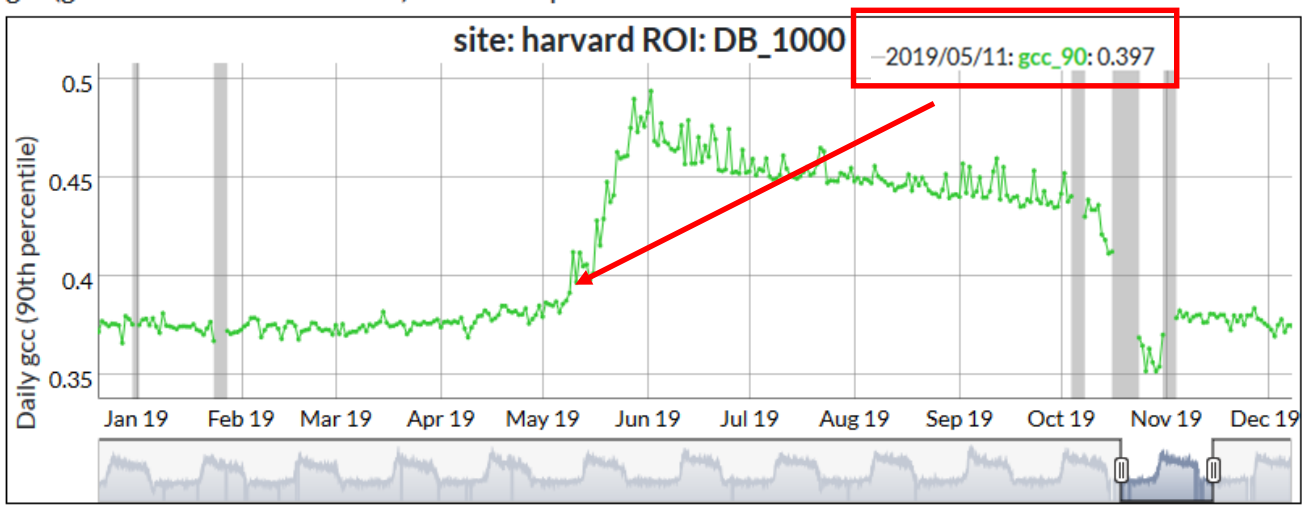
one year

- **Hover** over dots to obtain exact date and gcc value

Site Name: harvard
Location: EMS Tower, Harvard Forest, Petersham, Massachusetts
Lat:42.5378 **Lon:**-72.1715 **Elev(m):** 340
Image Count: 145631 **Start Date:** 2008-04-04 **Last Date:** 2020-10-07

ROI Name: DB_1000 (Deciduous trees in foreground)

gcc (green chromatic coordinate) timeseries plot



Canopy "Greenness"

$$= \frac{G_{DN}}{R_{DN}+G_{DN}+B_{DN}}$$

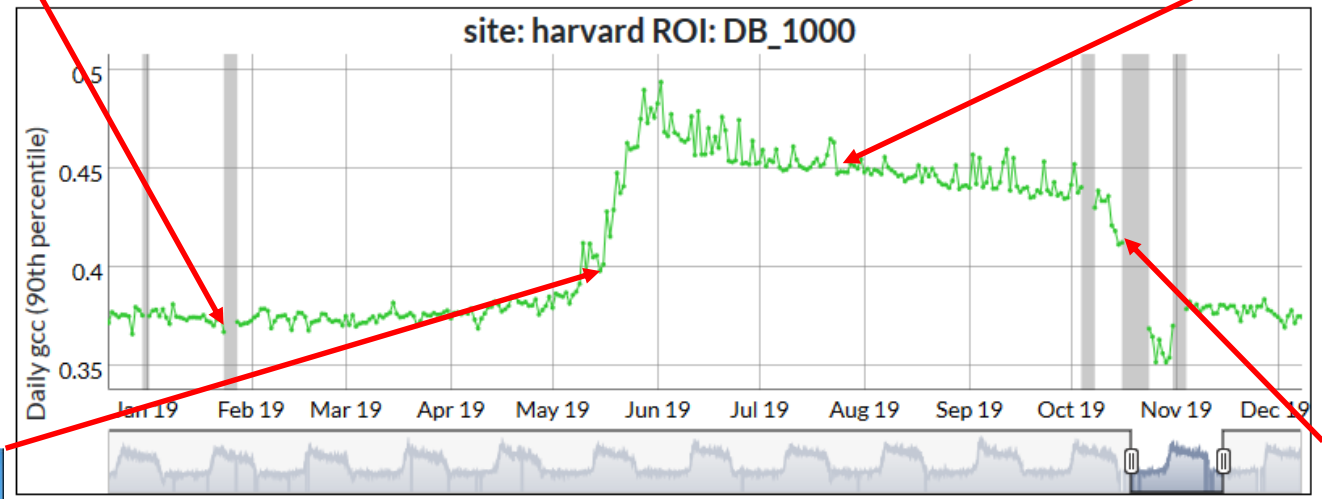
relative brightness of the green channel, normalized against the overall brightness of the red green and blue channels together

- **Hover** over dots to obtain exact date and gcc value
- **Click** on individual dots to obtain the underlaying images of that day

Site Name: harvard
Location: EMS Tower, Harvard Forest, Petersham, Massachusetts
Lat:42.5378 **Lon:**-72.1715 **Elev(m):** 340
Image Count: 145631 **Start Date:** 2008-04-04 **Last Date:** 2020-10-07

ROI Name: DB_1000 (Deciduous trees in foreground)

gcc (green chromatic coordinate) timeseries plot



Download provisional data

https://phenocam.sr.unh.edu/we

phenocam.sr.unh.edu/webcam/roi/harvard/DB_1000/

Apps

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Image Count: 145631 **Start Date:** 2008-04-04 **Last Date:** 2020-10-07

ROI Name: DB_1000 (Deciduous trees in foreground)

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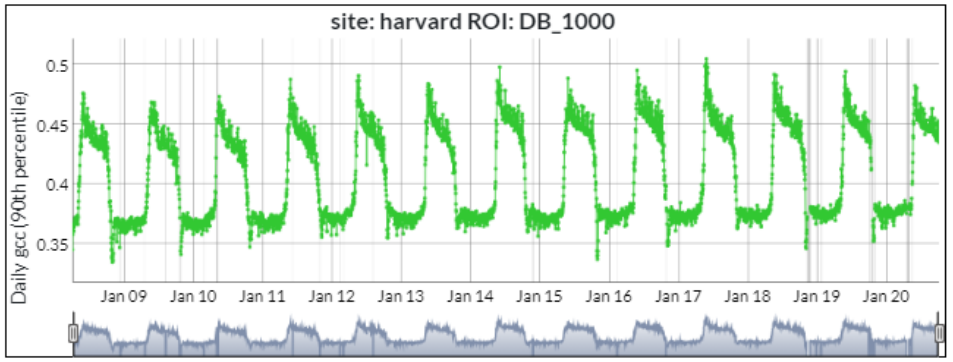

PNG Plot

Provisional Data Links

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Provisional Data

ROI Mask List (1)

(Mask CSV file)

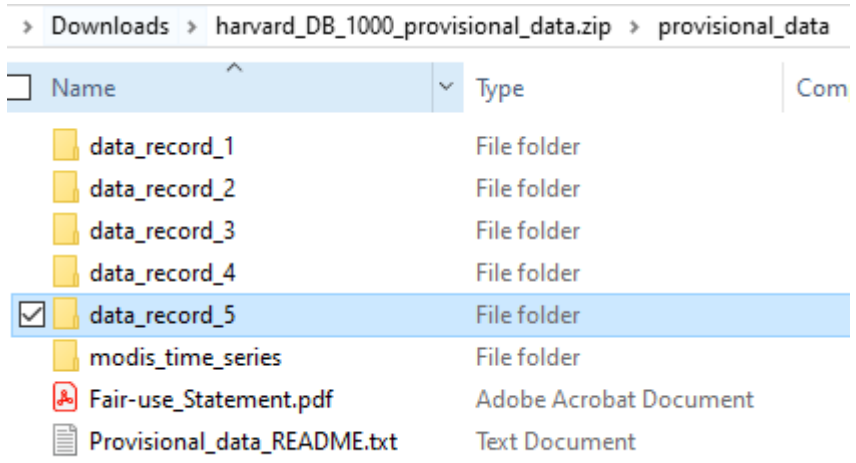
Mask: 1
Start Date: April 4, 2008, midnight
End Date: Dec. 31, 9999, 11:59 p.m.
Mask File: harvard_DB_1000_01.tif

Toggle Mask

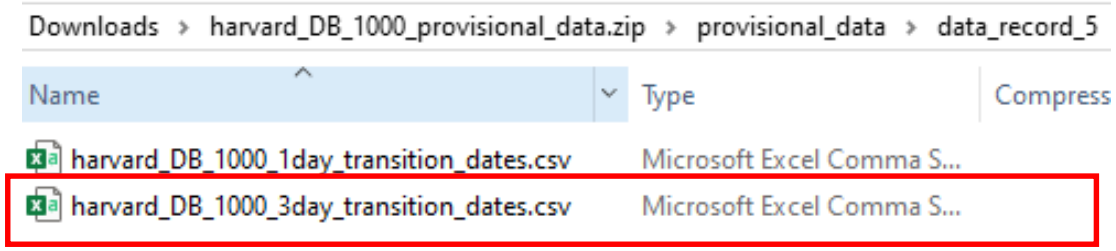
Accessing provisional data

(preliminary data, processed and updated daily but not checked daily by staff)

1)

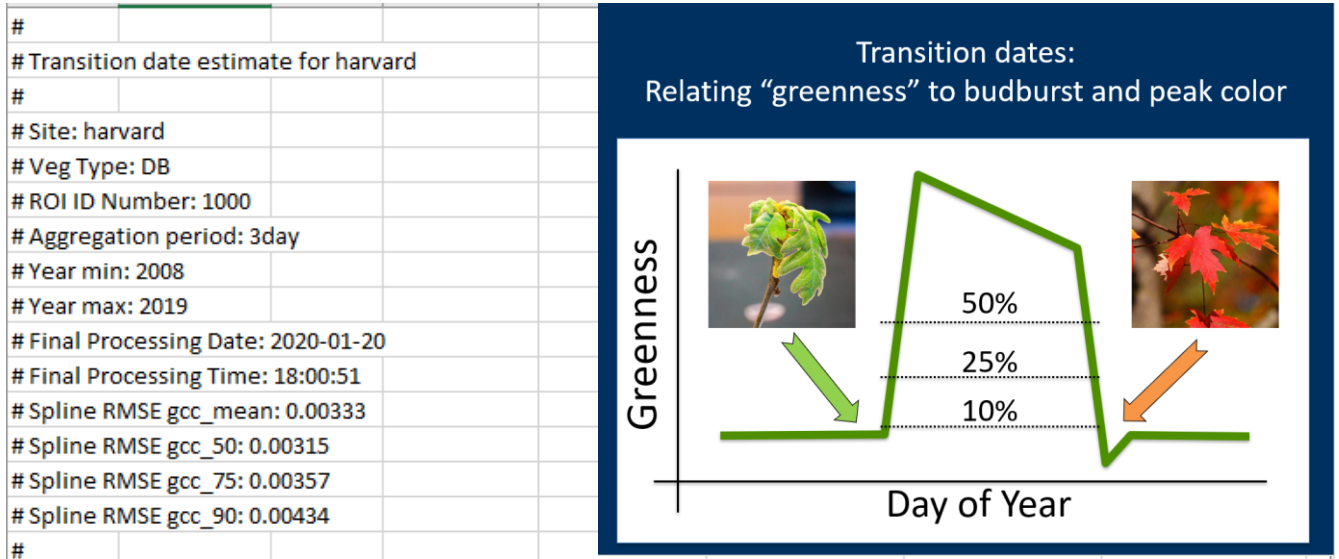


2)



- 1-day file is higher temporal resolution (data is reported at one-day time step, statistics calculated using only the valid images of that 1-day)
- 3-day file tends to be less noisy (data is reported at a 3-day time step corresponding the middle day of the 3-day interval, but statistics use all valid images across the 3-day interval)

3)



```
#
# Transition date estimate for harvard
#
# Site: harvard
# Veg Type: DB
# ROI ID Number: 1000
# Aggregation period: 3day
# Year min: 2008
# Year max: 2019
# Final Processing Date: 2020-01-20
# Final Processing Time: 18:00:51
# Spline RMSE gcc_mean: 0.00333
# Spline RMSE gcc_50: 0.00315
# Spline RMSE gcc_75: 0.00357
# Spline RMSE gcc_90: 0.00434
#
```

site	veg_type	roi_id	direction	gcc_value	transition_10	transition_25	transition_50	tr
harvard	DB	1000	rising	gcc_90	5/4/2019	5/11/2019	5/18/2019	
harvard	DB	1000	rising	gcc_75	5/5/2019	5/11/2019	5/18/2019	
harvard	DB	1000	rising	gcc_50	5/5/2019	5/11/2019	5/18/2019	
harvard	DB	1000	rising	gcc_mean	5/4/2019	5/11/2019	5/18/2019	
harvard	DB	1000	falling	gcc_90	10/22/2019	10/18/2019	10/13/2019	
harvard	DB	1000	falling	gcc_75	10/22/2019	10/18/2019	10/13/2019	
harvard	DB	1000	falling	gcc_50	10/22/2019	10/19/2019	10/13/2019	
harvard	DB	1000	falling	gcc_mean	10/22/2019	10/19/2019	10/14/2019	