Genome Database for Vaccinium

Genomics, genetics, and breeding resources for blueberry, cranberry, bilberry, and lingonberry research

Issue 8 | July 2023

What's new in GDV?

Outreach

- GWAS Search and Viewing in MapViewer video (2:23 mins)
- How to Search Traits and See Associated Data video (1:49 mins)

Tool Improvements

- GWAS added to updated QTL/GWAS search

Data

- New data will be added next quarter

Vaccinium Pangenome Browsing

The Vaccinium Pangenome graphs are available to view on GDV. Patrick Edger and co-authors have provided this project data, and the related blueberry and cranberry genome sequences, pre-publication and we are excited to make it available to the Vaccinium community.

The graph data is available on GDV using the UCSC Genome Browser which has a variety of tutorials. But to help get you started, let's go over some basics in this newsletter. The data that is displayed is a HAL (hierarchical alignment) graph that was provided by the authors and then processed to be displayed in the UCSC Genome Browser. GDV is the only place to find the links to the Vaccinium Pangenome Graphs.

Links to open graph regions in UCSC Genome Browser

Other columns are links to genome information on GDV

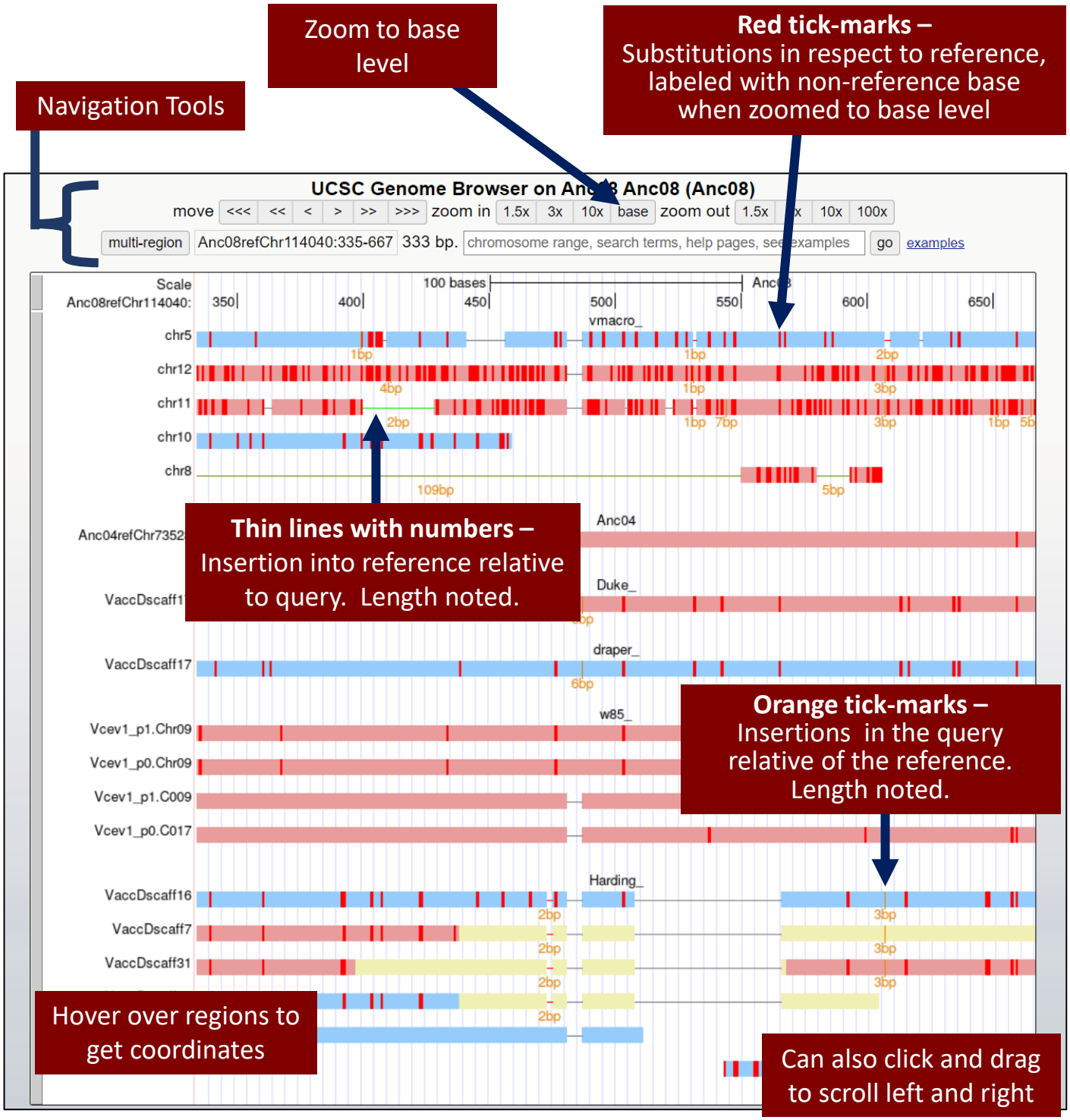
The pangenome graph data provided by the *Vaccinium* Pangenome Project is available to view via the UCSC Genome Browser through GDV. pangenome graph either by anchored regions or by cultivar. You can navigate to different chromosomes within in region by typing coordinates i Genome Browser. The table below lists the pangenome region and the genomes that are present. Genomes that are in GDV, have hyperlinks to more information.

Link to Graph Region	Blueberry Genomes in Graph	Cranberry Genomes in Graph
By Anchored Region of Graph		
Anc00	Raven	Black Veil, Cumberland, Budd's Blues, Early Richard, Stevens (vmacro)
Anc01	Raven	Black Veil, Cumberland, Budd's Blues, Early Richard
Anc02	Duke, Draper, Liberty, W85-20	Early Richard
Anc03	W85-20, Pioneer	Black Veil, Cumberland, Stevens (vmacro)
Anc04	Duke, Draper, Liberty, Brigitta Blue, Raven	
Anc05	Duke, W85-20, Bluecrop, Elliot	Budd's Blues
Anc06	Raven	Black Veil, Budd's Blues, Early Richard, Lemunyon
Anc07	Misty	Black Veil, Budd's Blues, Early Richard, Lemunyon
Anc08		
By Cranberry Cultivar		
Black Veil	Arcadia	Cumberland, Budd's Blues, Early Richard
Budd's Blues	Arcadia	Early Richard, Lemunyon, Native Budd's Blues
Cranmoor Natives	Arcadia	Early Black, Garwood Bell, Native Budd's Blues
Cumberland	Arcadia	Black Veil, Budd's Blues, Early Richard
Early Black	Arcadia	Cranmoor Natives, Garwood Bell, Native Budd's Blues
Early Richard	Arcadia	Budd's Blues, Lemunyon, Native Budd's Blues
Garwood Bell	Arcadia	Early Black, Cranmoor Natives, Native Budd's Blues

Graphs are either by Anchored Region or by blueberry or cranberry cultivar

Pangenome Graph Color-Coding and Navigation

Let's look at the Anc08 region and learn what the colors mean and some other useful hints.



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Training Workshops

BIMS Workshop at NAPB 2023!

We had a successful BIMS workshop at **NAPB 2023** (July 16-20, Greenville, SC)! Thank you for those who participated! The presentations for each section of workshop including the use case demo is available at the presentations page in breedwithbims.org. Recordings will also be available when they are released.

Database Workshop at ASHS 2023!

We are hosting a workshop for specialty crop databases at **ASHS 2023** (July 31-August 4, Orlando, Florida)! This interactive workshop will be on Thursday, August 3, 2023 10:15 AM - 12:15 PM.

This workshop unites researchers and breeders focusing on tree fruits, berries, nuts, and vegetables. Its goal is to boost research efficiency by enhancing specialty crop community databases. Participants will receive training on how to use database resources through use case demos, data submission, and contributing vital feedback for long-term sustainability.

Here is the Hands-on Training for Effective Use, Data Contribution, and Options for Long Term Sustainability of Specialty Crop Community Databases workshop outline:

- Workshop Introduction (5 min)
- Introduction to Specialty Databases (10 min)
- Data and tools in Specialty Databases (15 min)
- Use case Demonstration (60 min)
    - Specialty Crop databases (45 min)
    - Breeding Information Management System (BIMS) (15 min)
- How to submit research data (10 min)
- Discussion on how to improve these databases (20 min)

Please join us on Thursday, August 3 in the Caribbean VI room from 10:15 AM to 12:15 PM

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