

Session

“Databases and online tools for displaying the anchored physical maps“

-








Wheat mapping and annotation data at URGI

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GnpGenome entry page

- Select your browser

select a data source :

 Wheat 3B FPC physical map	 Wheat 3B annotation FHB	 TriAnnot Pipeline Light
 Vitis vinifera 8X	 Vitis vinifera 12X	
 Arabidopsis TAIR v.7	 Arabidopsis TAIR v.7 SNPs	

<http://urgi.versailles.inra.fr/data/gnpGenome/run.php>

Wheat 3B FPC physical map

- Tool versions

- v2.0

- contig centric view
 - GBrowse 1.69
 - version of the 3B FPC (published)

Paux *et al.*
Science (2008)
322:101-104

- v2.1

- add of deletion bin track
 - index of all features in "Landmark or Region" (wildcard allowed)

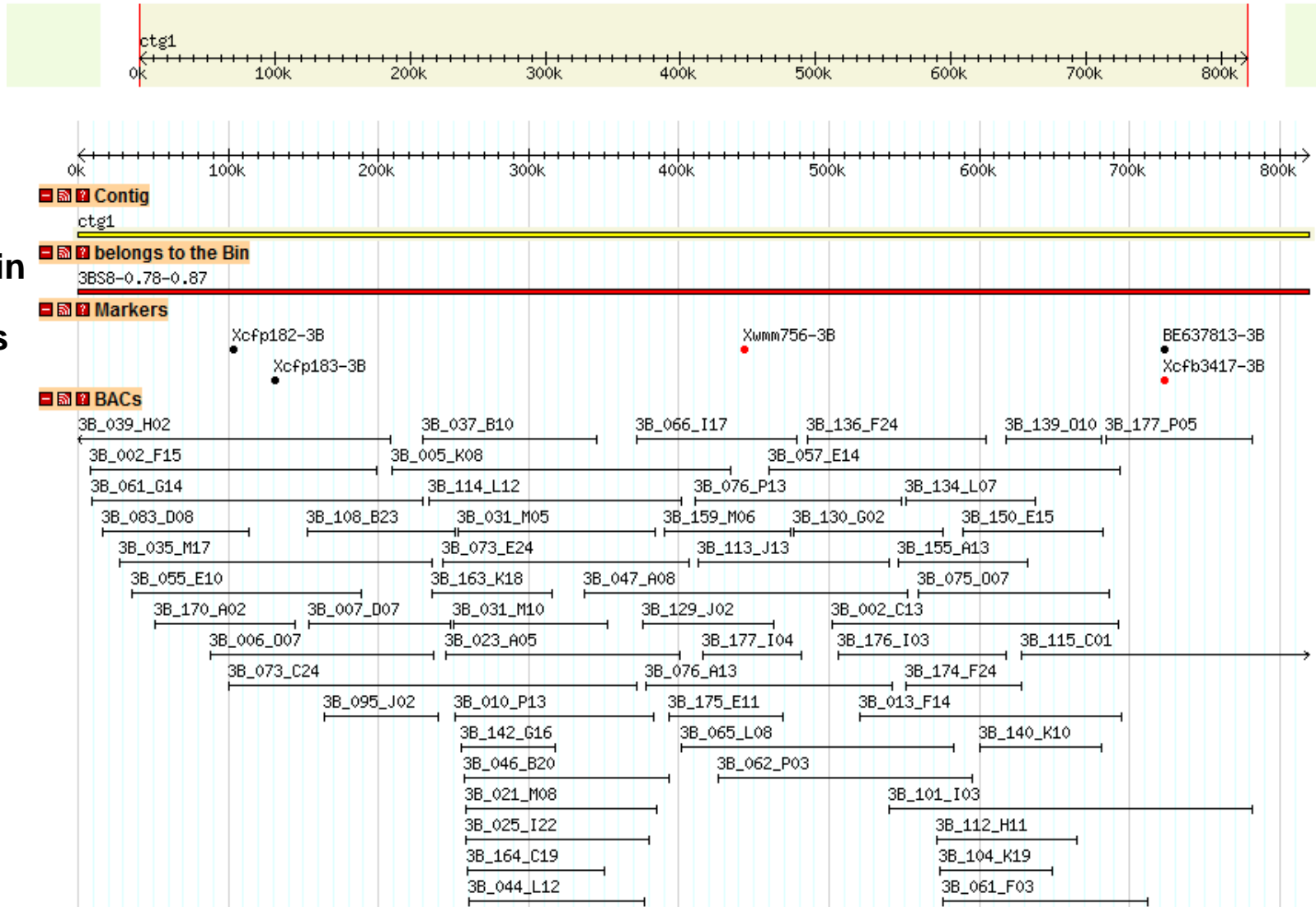
- v2.2

- speed improvement with GBrowse 1.70 and MySQL 5

http://urgi.versailles.inra.fr/cgi-bin/gbrowse/wheat_FPC_pub/

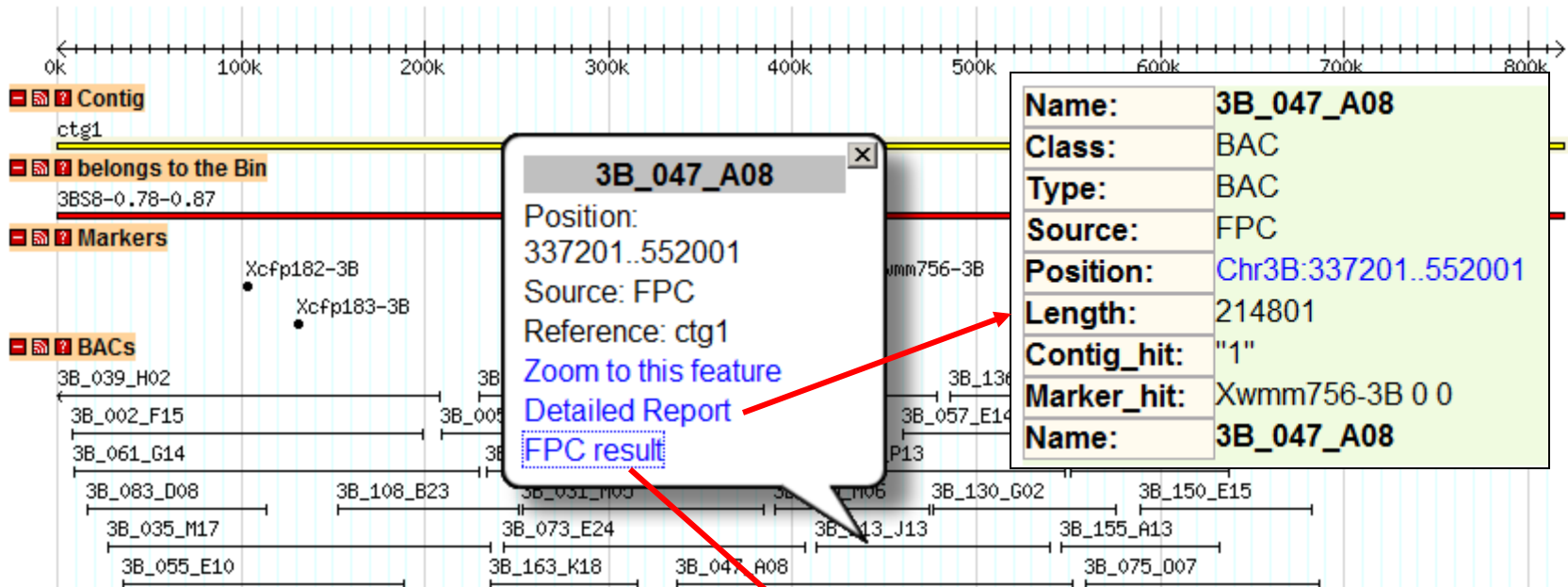
Wheat 3B FPC physical map

Contig
Deletion bin
Markers
BACs



Wheat 3B FPC physical map

▪ BACs informations



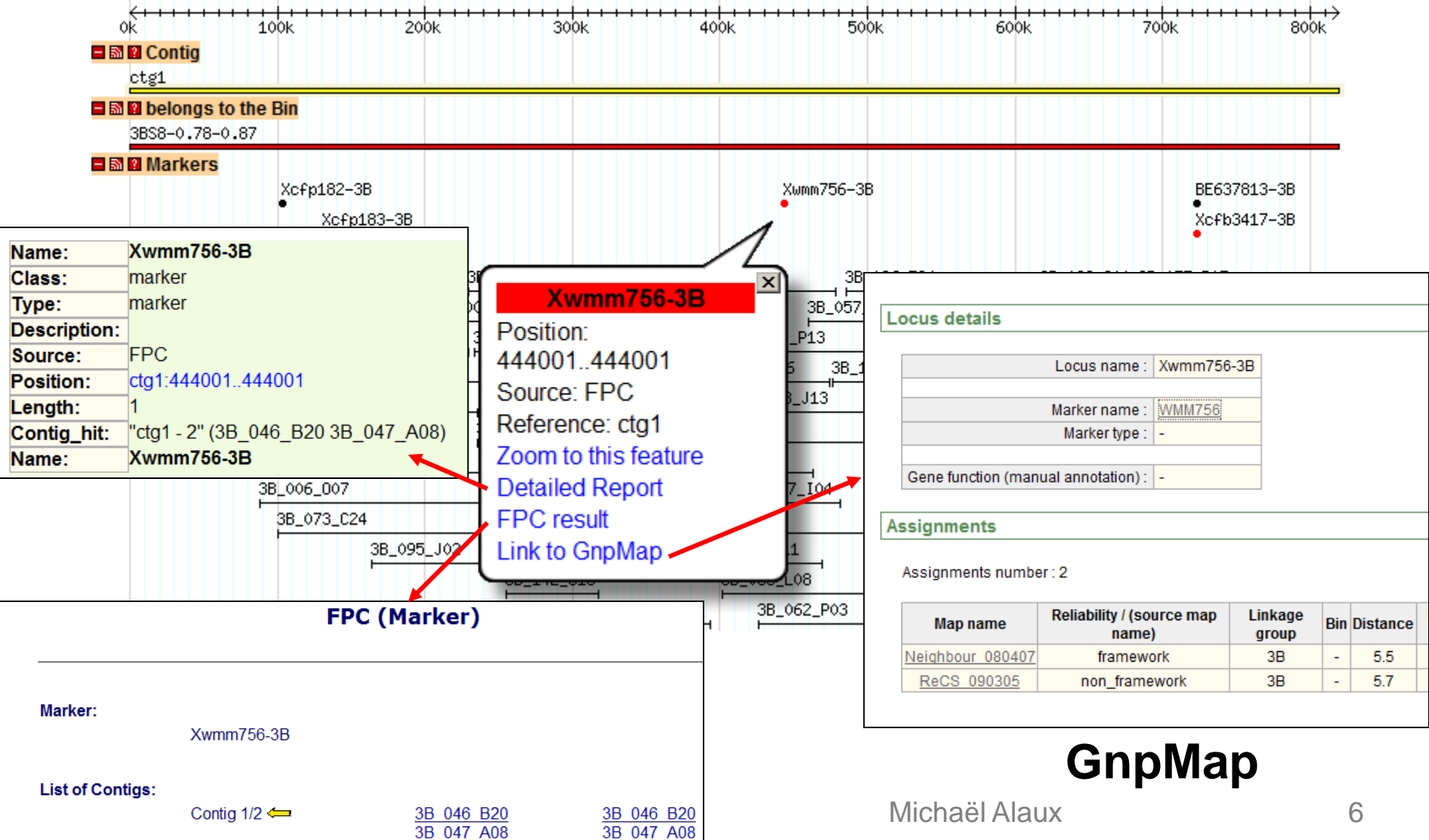
FPC (Clone)

Clone: 3B_047_A08 Contig: 1

List of Markers: [Xwmm756-3B](#)

Wheat 3B FPC physical map

- Markers in **red** have additional details in GnpMap



The screenshot displays a physical map of the Wheat 3B FPC region, ranging from 0k to 800k. A yellow bar represents contig ctg1, and a red bar represents bin 3BS8-0.78-0.87. Several markers are plotted, with Xwmm756-3B highlighted in red. A callout box for Xwmm756-3B provides the following details:

- Name:** Xwmm756-3B
- Class:** marker
- Type:** marker
- Description:**
- Source:** FPC
- Position:** ctg1:444001..444001
- Length:** 1
- Contig_hit:** "ctg1 - 2" (3B_046_B20 3B_047_A08)
- Name:** Xwmm756-3B

Additional callout boxes provide further details:

- FPC (Marker):**
 - Marker:** Xwmm756-3B
 - List of Contigs:** Contig 1/2 ← 3B_046_B20 3B_047_A08
- Locus details:**
 - Locus name: Xwmm756-3B
 - Marker name: WMM756
 - Marker type: -
 - Gene function (manual annotation): -
- Assignments:**

Assignments number : 2

Map name	Reliability / (source map name)	Linkage group	Bin	Distance
Neighbour_080407	framework	3B	-	5.5
ReCS_090305	non_framework	3B	-	5.7

Wheat 3B FPC physical map

- GnpMap the genetic mapping database

<http://urgi.versailles.inra.fr/GnpMap/mapping/welcome.do>

Map name	Population	Taxon
ARE_050606	ARE	Triticum aestivum
AXO_050428	AXO	Triticum aestivum
CtCs_040630	CtCs	Triticum aestivum
DEL_050308	Deletion	Triticum aestivum
Ditelo_050308	NT_DT	Triticum aestivum
ITMI_040618	ITMI	Triticum aestivum
Neighbour_080407	TaVirtualPop03	Triticum aestivum
NulliTetra_050308	NT_DT	Triticum aestivum
RER_040618	RER	Triticum aestivum
RER_050614	RER	Triticum aestivum
RLAc_071219	RLAc	Triticum aestivum
ReCS_090305	ReCS	Triticum aestivum
SOds_071219	SOds	Triticum aestivum
SumStoa_090225	SumStoa	Triticum aestivum
SupBW_071212	SupBW	Triticum aestivum
TXO_050621	TXO	Triticum aestivum
TaVirtualPop01_071219	TaVirtualPop01	Triticum aestivum
TaVirtualPop02_090219	TaVirtualPop02	Triticum aestivum
WuMa_071219	WuMa	Triticum aestivum

- ✓ **16 wheat genetic maps** with different versions of:
ARE, AXO, CtCs, ITMI, RER, Neighbour, RLAc, ReCS, SOds, SumStoa, SupBW, TXO, TaVirtualPop, WuMa.
- ✓ **3 wheat cytogenetic maps:**
DEL, Ditelo, NulliTetra.
- ✓ more than **10 000 wheat markers**
- ✓ more than **500 wheat QTLs**

Wheat 3B FPC physical map

- Deletion bins
 - search by GBrowse

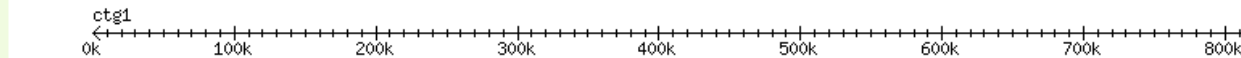
Search

Landmark or Region:

Data Source
 Wheat 3B FPC physical map v2.2

The following 41 regions match your request.

Matches on ctg1

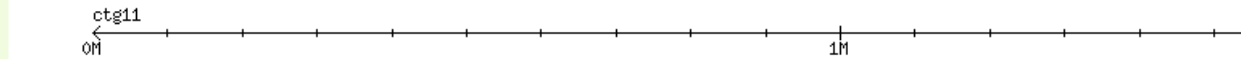


Matches 3BS8-0....

[3BS8-0.78-0.87](#) bin:FPC([3BS8-0.78-0.87](#))

[ctg1:1 bp..819.6 kbp \(819.6 kbp\)](#)

Matches on ctg11

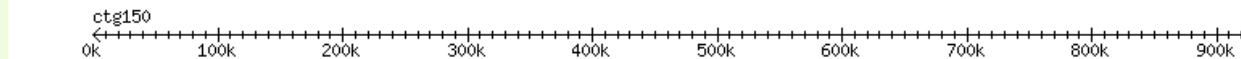


Matches 3BS8-0....

[3BS8-0.78-0.87](#) bin:FPC([3BS8-0.78-0.87](#))

[ctg11:1 bp..1.552 Mbp \(1.552 Mbp\)](#)

Matches on ctg150



Matches 3BS8-0....

[3BS8-0.78-0.87](#) bin:FPC([3BS8-0.78-0.87](#))

[ctg150:1 bp..928.8 kbp \(928.8 kbp\)](#)

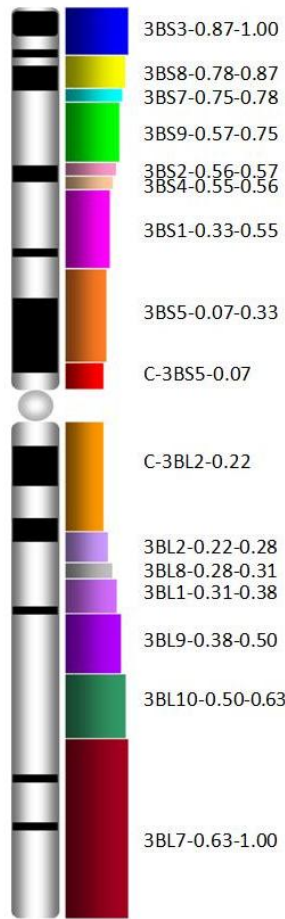
Links to contigs belonging to the bin

Wheat 3B FPC physical map

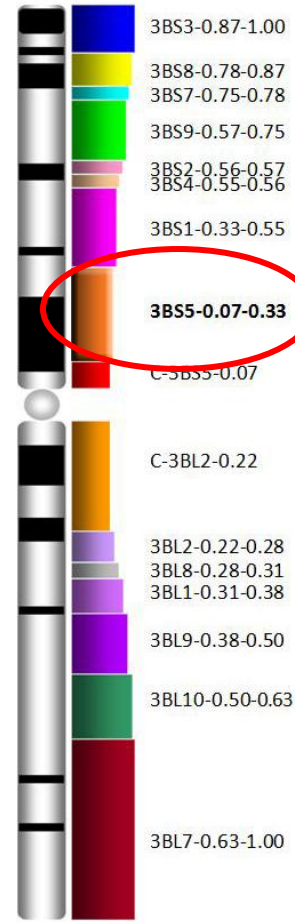
- search by the clickable image

3B Chromosome deletion bins

Click on a bin to display the contigs list in the physical map browser.



Put the mouse on a bin to highlight it

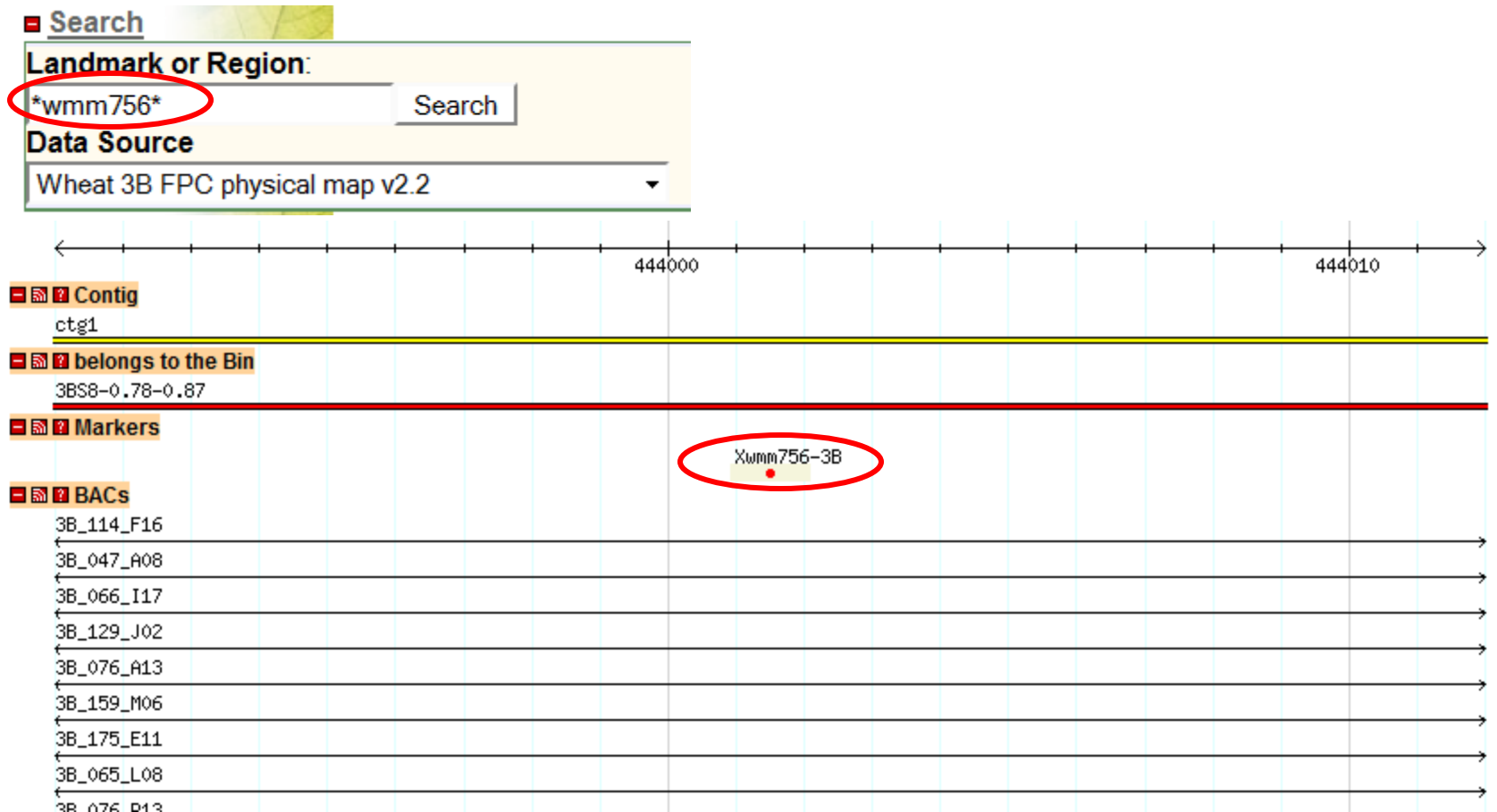


Click on it to display the GBrowse result page

<http://urgi.versailles.inra.fr/projects/Triticum/deletionBin.php>

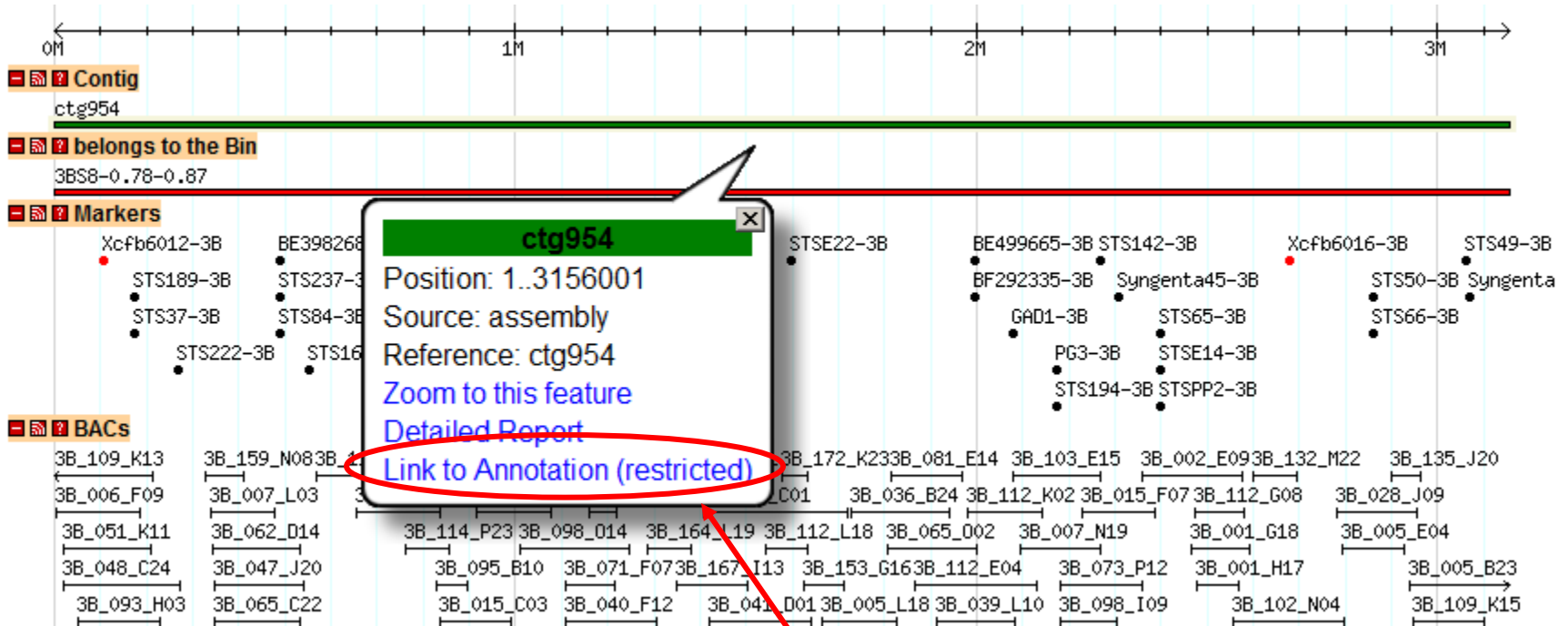
Wheat 3B FPC physical map

- Other search example with GBrowse
 - a marker with wildcards: *wmm756*



Wheat 3B FPC physical map








- Contig or BAC in **green** are annotated



Link to the wheat 3B annotation FHB (restricted access)

Wheat 3B annotation FHB

select a data source :

 Wheat 3B FPC physical map	 Wheat 3B annotation FHB	 TriAnnot Pipeline Light
 Vitis vinifera 8X	 Vitis vinifera 12X	
 Arabidopsis TAIR v.7	 Arabidopsis TAIR v.7 SNPs	

Wheat 3B annotation FHB

- Tool version

- https://gpi.versailles.inra.fr/cgi-bin/gbrowse/wheat3B_RPH7

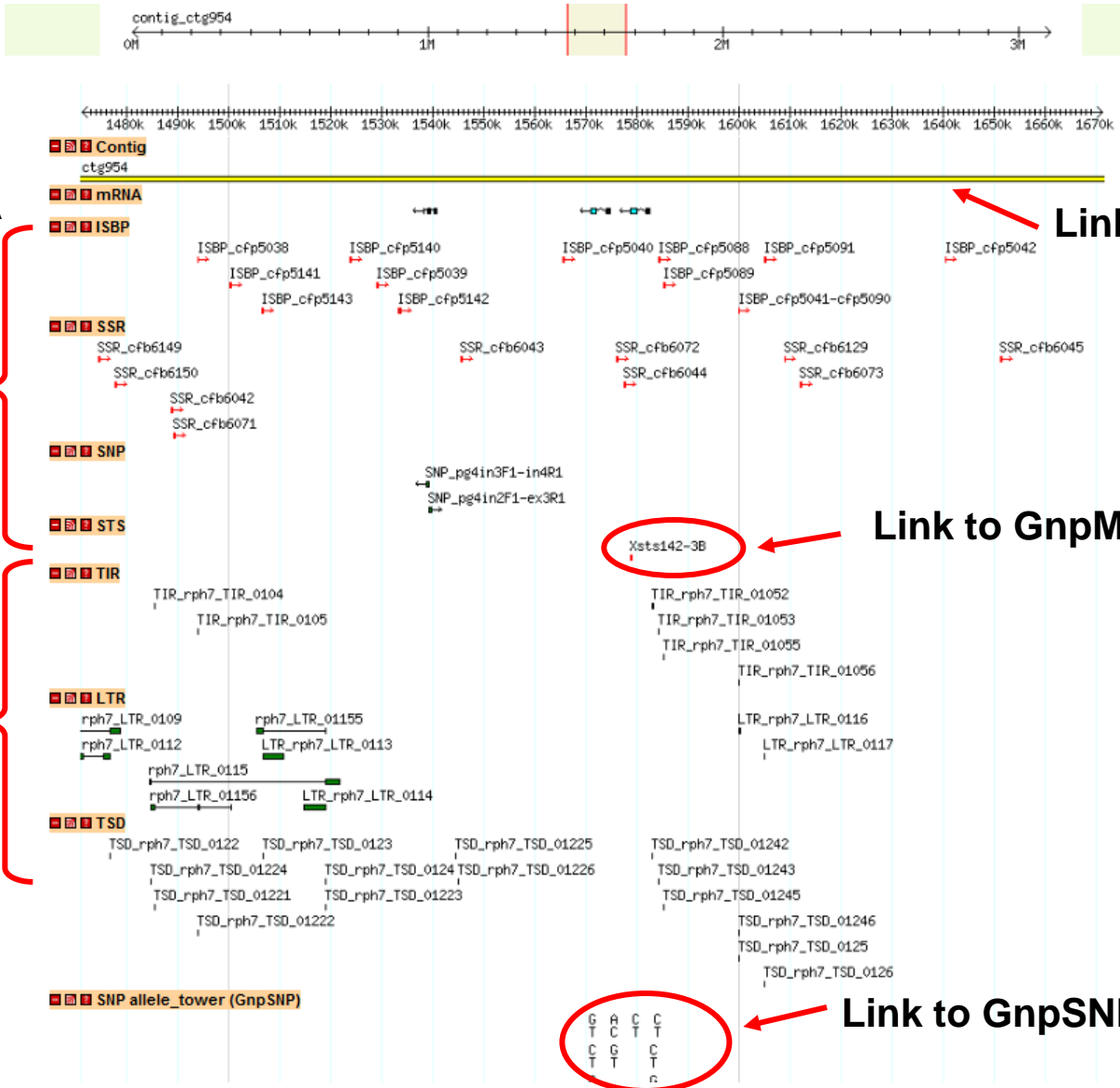
- V1.1 : GBrowse 1.70

- Restricted access (until publication by data owners)

- Thanks to Frederic Choulet for the manual curation

- **The same annotation browser system will be used to display sequenced and annotated BACs when available**

Wheat 3B annotation FHB

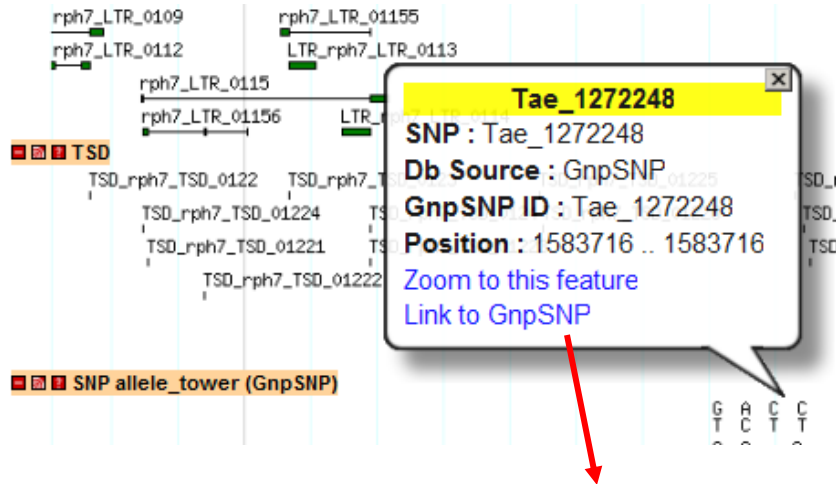


Link to physical map

Link to GnpMap

Link to GnpSNP

Wheat 3B annotation FHB




SNP details

Name :	Tae_1272248
Source :	GnpSNP

Internal references

Database	Reference name	Reference value
Wheat 3B annotation (FHB) v1.1	SNP name	Tae_1272248



SNP complements

SNP type :	SNP
Variation :	C/T
Linked with variations :	INRA_CF_ASP__82_BT002 
	View list

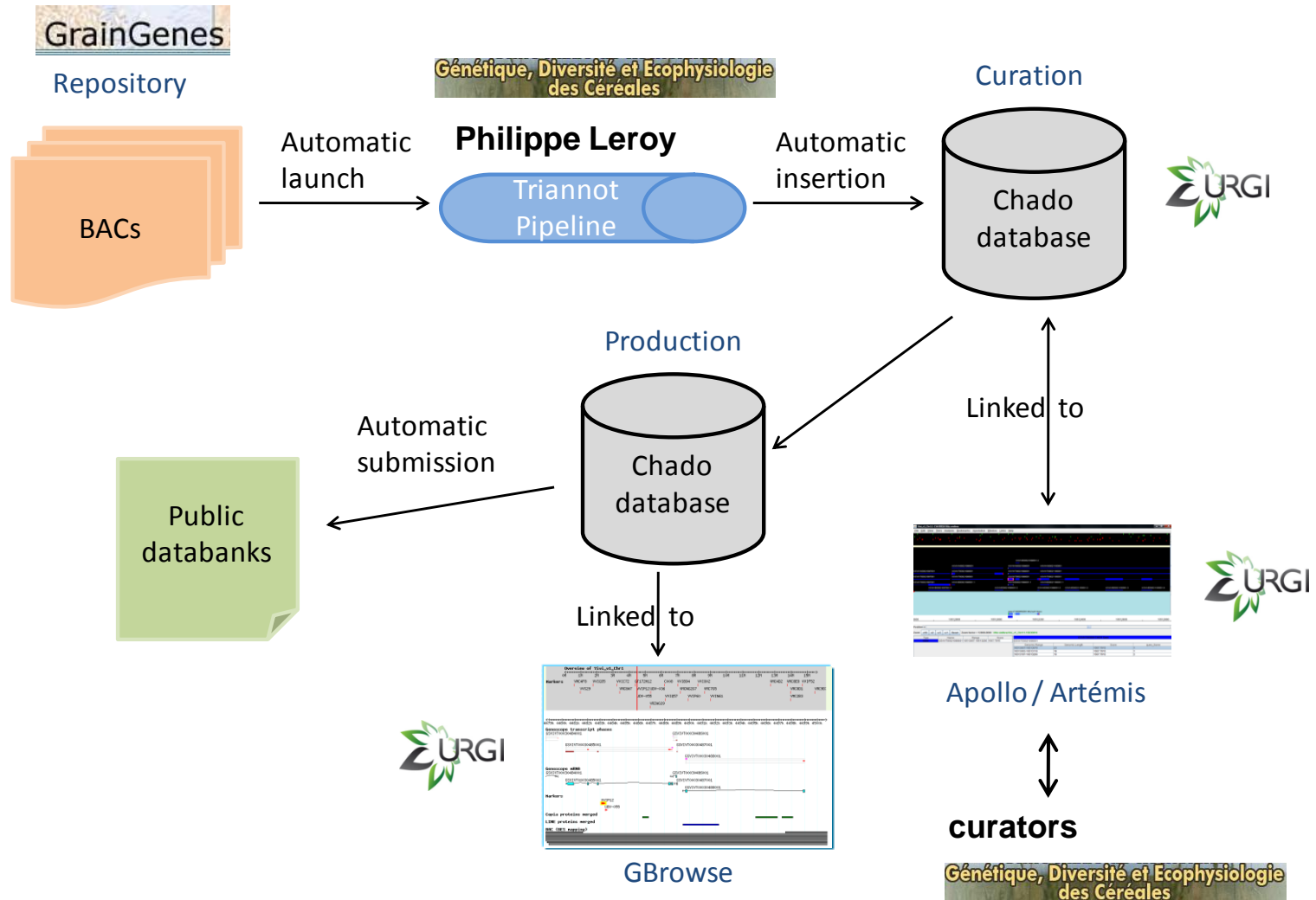
GnpSNP

<http://urgi.versailles.inra.fr/GnpSNP>

SNP sequences

5' flanker on ref.seq. :	>Tae_1272248-5' gaaggcgagcgagctggcgctatgcacatgcagctgccccatgctggctccggctcatccgccccagcatgctngcccc t	
3' flanker on ref.seq. :	>Tae_1272248-3' gtctacaacaatacaatcaacctggcatggctaccagccgcccgtgctcattggacacaacatgtagattgtagatcatg tgagttatttgacgaaatgcaacgcacatagggcggttagctaggctaggagaccagactctcatggccgggacgcaggtg acgcaccaacgacatgtgtttgaggtagagtacatgcatggctggcattttcgccatggacgtggaaggactcaag ggtggcagcc	

URGI 3B BACs annotation perspectives



Take-home messages

- 3B physical map browser center on contig with links to genetic mapping, SNP and BAC annotation data

http://urgi.versailles.inra.fr/cgi-bin/gbrowse/wheat_FPC_pub/

- Easy access to deletion bins with the clickable image

<http://urgi.versailles.inra.fr/projects/Triticum/deletionBin.php>

- This physical map browser could display **other wheat chromosomes**

- We only need the FPC file
- Contact me at michael.alaux@versailles.inra.fr

Acknowledgments

URGI

M. Alaux
D. Verdelet
A. Keliet
E. Kimmel
B. Brault
N. Mohellibi
V. Jamilloux
B. Hilselberger
J. Amselem
S. Durand
I. Luyten
S. Reboux
D. Steinbach
H. Quesneville

& all URGI members

GDEC

P. Leroy
E. Paux
F. Choulet
C. Ravel
N. Guilhot
F. Balfourier
P. Sourdille
J. Le Gouis
C. Feuillet



INRA support

H. Lucas, DGAP
C. Christophe, DSPPV



Biogemma



Fundings



GMOD community

