

Preliminary Damage Report

Luke Haggerty

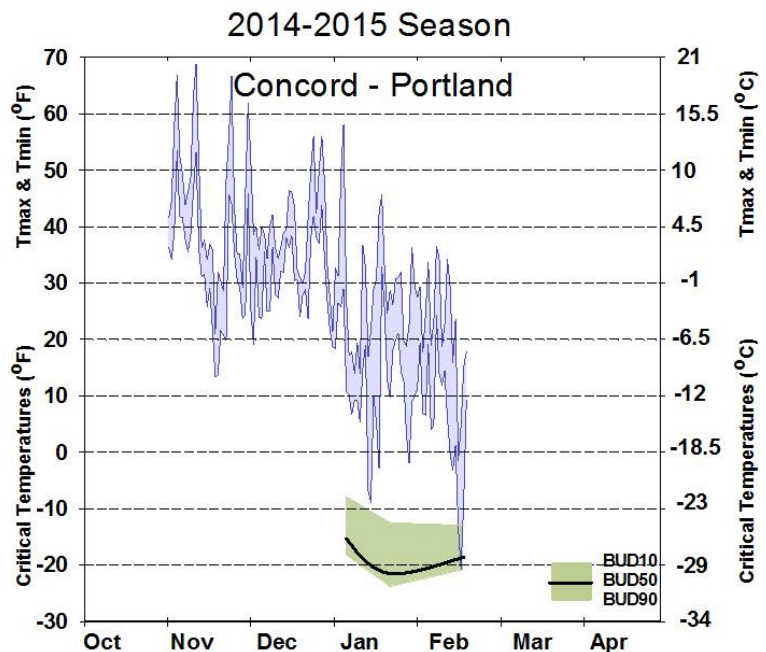
Viticulture Extension Associate

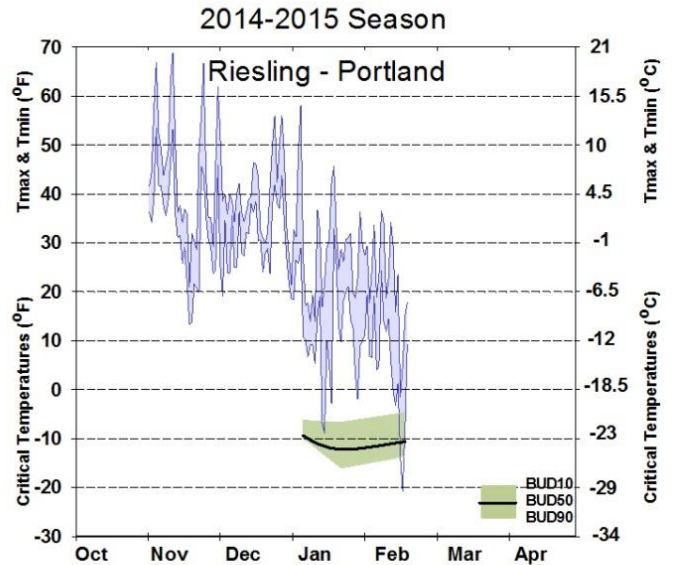
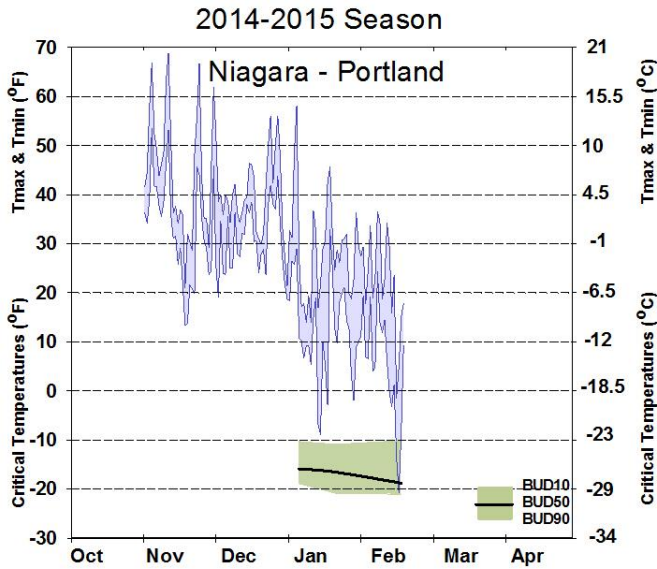
Lake Erie Regional Grape Program

At this point it is difficult to determine the extent of the damage. Right now I can say there will be damage, I just do not know specifically how much damage. Normally I post the ‘% Bud Mortality’, but I want to wait before I post the numbers for two reasons. First, I need to gather more canes from across the belt to ensure the accuracy of my results. Second, with the continued cold temps the buds have not had a chance to break down, oxidize, and brown up. I have been cutting buds, and there is damage in every variety I have looked at. I’m finding a large range of damage in Concords and Niagara making it difficult to report a specific percentage.

Our plan is to collect canes from around the belt and report by area. **If you would like to include your canes into this assessment please bring samples to CLEREL so we can assess them.** We will be collecting canes February 23rd and 24th (next Monday and Tuesday) so bring your canes in then. **Collect 20 canes that have 6-10 buds**, bundle and label them with name, variety, location, and date collected (ex. Haggerty, Concord, Westfield, 2/20/15). We hope to report our findings later that week (Feb. 24th – 27th).

What we know now: Bud Hardiness samples were sent out early this week and were posted Thursday Feb. 19th. See all results here <https://grapesandwine.cals.cornell.edu/extension/bud-hardiness-data>. The reports do not look good. In the graph below, the temperatures are in purple shading and show the temperatures throughout the winter. Green shaded areas and black line show the temperature when the samples (buds) froze. Within the green shaded area above the black line 10% of the buds froze. The black line is LT50 or BUD 50 and the temp where 50% of the buds froze, and green shaded area below the black line is where 90% of the bud froze. The point where temperatures (purple shaded area) meet LT/BUD 10, 50, and 90 (green shaded area and black line) we expect to see corresponding damage. According to the bud hardiness model for Concords here in Portland we should be expecting ~90% bud loss.





I've been cutting buds, but with the continued cold temps they have not oxidized and revealed the true damage. The bud cuttings (bud mortality) from where we take the bud hardiness samples from are not matching up at this time.

Concord and Niagara: So far I have looked at samples from 7 different Concord blocks with a large variation of damage (moderate to severe). There are many contributing factors to bud hardiness and survival such as temp, vine health, last year's crop load, etc. From my observation most of this variation is vine health and temperature related. I'm finding moderate damage (30%-40% Primary Bud Mortality) in healthy vines and severe damage (<75% Primary Bud Mortality) in unhealthy vines (site related in some cases). These are scary numbers, but secondary and tertiary bud survival is looking better than the primary bud. In most cases secondary bud mortality was half of what the primary bud mortality was. For example, a sample that showed 50% primary bud mortality had 25% secondary bud mortality.

We know there is damage, but it is too early to predict the extent of the damage. I will continue my damage assessment and keep you posted on my findings.

Lake Erie Grape Region NEWA Weather Data		
Location	Date	Low (F)
North East Lab, PA	2/16/15	-21.0
Harborcreek, PA	2/16/15	-20.6
North East Escarpment	2/16/15	-20.3
Ripley	2/16/15	-20.0
Portland Route 5	2/16/15	-23.2
Portland CLEREL	2/16/15	-22.2
Portland Escarpment	2/16/15	-17.0
Dunkirk Airport	2/16/15	-26.0
Silver Creek	2/16/15	-22.2
Sheridan	2/16/15	-26.6
Versailles	2/16/15	-29.9
Appleton	2/17/15	-8.3
Somerset	2/17/15	-7.9
Lockport	2/16/15	-13.0