



The 2022 Terra Nova Trading / GLM Trading Crop Estimate

So:

“You do realize how bad the frost was...?”

And:

“Are you going to account for the mega-drought sufficiently...?”

We guess that we can call these “pre-emptive objections” to our number, and perhaps a first after a quarter century of estimating... Not so much of an “early consensus”, as more an early wish for “2.50, or less”, given the current perceptions of supply.

This year we were able to do a full field survey, with two sets of eyes: Stuart and JJ spent six full days – from sunrise to sunset – getting in and out of the car, literally hundreds of times, and walking the orchards; we cannot emphasize enough how crucial this is to our process – it’s all about accumulation of impressions as well as data and calculations.

With a toddler and a baby at home, I believe JJ referred to this grueling itinerary as a short vacation; and Stuart with two teenage daughters at home – ditto!

Michael and Liam were both unable to join the field trip, but our method remains the same; hopefully we can get our boots muddy, or more likely dusty, in some of the years to come.

Our estimate for the 2021 crop was 2.80 billion pounds, so shy of the 2.90 actual; our pounds per acre estimate was 2190, compared to 2210 actual – so we missed by 20 pounds to the acre.

Time to review the recent yield history, and it tells quite an interesting story:

<u>Year</u>	<u>Yield (Pounds per acre)</u>
2015	2070
2016	2270
2017	2260
2018	2080
2019	2150
2020	2500
2021	2210
2022	2100 (e)

If you remove the 2020 productivity as being somewhat of an outlier, there is not a massive variance: the average is 2172 pounds per acre, so by calling 2022 as 2100 pounds per acre, we are saying that this crop has slightly below average production, and similar to the 2015 drought year, and 2018 frost year.

Before we move on to the bearing acres, now is a good time to say that the variations from grower to grower, location to location, have never been more extreme, and the very idea of average circumstances is perhaps problematic, except at the end of the season we harvest a verifiable quantity of almonds, from a known acreage, and if you have a calculator...

For bearing acres, we have utilized available land data, as well as nursery reports, to come up with a number of 1.38 million acres – based on 110,000 additional, and about 50,000 removed; amazingly we believe there are about 115,000 3rd leaf (technically) non-bearing that may toss about 50 million pounds into the pot.

In broad strokes, the 2022 crop has some areas severely impacted by frost and water issues, but there are plenty of great crops out there, and the acreage continues to grow, and the tree demographics are increasingly productive - we see these negatives and positives as essentially cancelling each other out, when conducting a year-on-year comparison; to all those readers who love a number, then our number is 2.90 billion pounds.

It is interesting to play the “perfect conditions” game, and consider what the maximum potential for the 2022 crop might have been, without a drought, or frost, and with a perfect bloom (- we had a very nice bloom this year for most -) then surely we would be staring down 2500 pounds per acre x 1.38 million acres = 3.45 billion pounds. So, our estimate is *more than* half a billion pounds below that, which can be attributed to the frost and the drought (up until now).

Some specific talking points from the team’s field notes, on issues we deem impactful:

- We saw clear evidence of greatly reduced crops, certain frost damage; most of the counties of the North were impacted, but especially parts of Solano, Tehama, Yolo and Colusa; to those that are invested, our in-house estimate for the Northern Counties this season is 25% off from last season, and fully 40% below their best ever.
- The North wasn’t the only area affected by the frost, as we saw isolated incidents in Fresno and Stanislaus Counties; also in other low-lying spots; and areas that clearly got very cold and were unable to run water for frost protection.
- Crops generally looked pretty good in many areas that were not affected by the frost, and had access to water last year, and also access for frost protection in February.

- “Stand out” varieties this year are Monterey & Independence, but these crops are perhaps still to drop some of the immature nuts in the coming weeks; that said, we know there were orchards of both these varieties that topped 4000 pounds to the acre in 2021, and along with NP have been most heavily planted in the last 5 years.
- Nonpareil crops look to be pretty good in the Southern counties, but definitely more inconsistent in the Central and Northern areas (when not specifically affected by the frost).
- Carmel variety looked decent even with some severe “crazy top”, but older orchards are being systematically removed, and being replaced by alternate varieties.
- Butte / Padre have another good crop but continue to be removed given their age and dwindling production; some limited plantings are happening, but long term this is not a variety to rely on.
- One of the bigger issues that California is facing is the continued drought and lack of snowpack that will seriously impact the growers’ ability to harvest the full crop that we can see on the trees in early April, and this is simply impossible to quantify.

For example, we know of a grower whose orchard we visited in April 2021 and we thought had an excellent crop of almost 3,000lbs per acre; we subsequently discovered (and were able to verify) that the actual yield harvested in 2021 was only 1,700lbs per acre, and the fact that the grower was unable to irrigate the orchard for 4 weeks during last June / July was clearly a contributing factor.

- In 2022, the water situation for many growers is worse, and visiting many orchards up and down the state gives us the opportunity to see first-hand the effects of different water circumstances in many areas. Orchards in excellent water districts still look lush and well-kept with good to excellent crops; at the other extreme we saw orchards on the Westside that have been on our tour itinerary for many years, that have now been totally abandoned, with zero crop to speak of yet still being counted in the bearing acreage total; including by us, incidentally, and there’s nothing like a few “zeros” to drag your averages down.

With incoming laws intended to limit pumping of groundwater (SGMA), a lack of surface water and the increased use of poor quality well water, this disparity between different almond acres will continue to show itself more and more, likely in the very near future.

- In California, we have over 300,000 acres (more than 20%) that are not in a water district at all, having no or severely limited access to surface water and are solely reliant on well water; also more than 200,000 acres are located in areas that would be considered very unreliable water districts, with zero allocation of surface water this year. Given the very low

price of almonds and already higher growing input costs, this dramatic increase in the cost of buying “available” water will serve to limit harvested crops in 2022 for some growers.

In contrast, some water districts have announced that they will be supplying 100% allocation of their surface water in 2022, so it is painfully clear that not all acres of farmland dedicated to growing almonds are created equal; as long as this drought continues, the difference between the water “haves” and “have nots” will only get wider, resulting in a greater number of orchard removals, or abandonment, or simply neglect.

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In our 2020 Estimate and Market Report we included the following two paragraphs:

“This is not usually something that we touch on, but the new crop prices we have reached – BV Std 5’s at 2.15FAS and NPX 23/25 at 2.45 – will be below cost for many growers; water is a huge variable, but cultural costs are typical in a range of \$3500 per acre with cheap water and minimal debt, to \$5000 (and up) with expensive water and big debt, or an onerous lease.

Add to that the increased production costs at the handler level – equipment costs, compliance, storage, labor etc. – where the cost from field to box is generally considered to be at least 35 cents for a low specification, and 45 cents (and up) for a high market specification”

Well, two years down the road, and we need to re-state significantly: for various reasons you must add at least \$1000 to the cultural costs, and at least 10 cents for the handler expenses; these numbers are not exaggerated: the cost of fertilizer has doubled, bees are up, fuel and labor show significant increases, and water may be simply “priceless”.

Further, it can cost as much to get a container from the packer to the port, as it does from the port to the other side of the world, not to mention the fact that the process of “simply” honoring a booking has become fraught with weeping, wailing, and the gnashing of teeth.

We said back in 2020 that the return to the grower was unsustainable; today it is much worse. Given some of the very low yields expected from orchards affected by frost, or drought, many tough decisions will need to be made by growers to try to save money, or limit losses: whether to reduce farming inputs; cut back on expensive water; not harvest the 2022 crop, as even harvest costs will not be recovered; immediately remove older orchards that were scheduled to be removed in the next few years anyway...

For every orchard with 3000lbs almond production, there has to be one at 1200lbs, in order to have a 2100lbs average; if you sell your 1200lbs at 1.85 FAS today, you might recover \$1700, which would put your loss at about \$2800 per acre; it’s hardly surprising that there is not much appetite for locking in forward prices... Admittedly this is an extreme example, but such issues will be very real for very many.

Hypotheticals abound, and you can play with various scenarios, but the almond growers are looking at losses above 2.0 billion dollars at current levels, and the pain will not be distributed evenly; there will be blood in the streets (or orchards, for certain).

Finally, these are extraordinarily challenging times for the almond industry, and we will take a close look at the market, and supply/demand challenges we face, at a later date.

We always throw in a caveat about the variables that might occur between our estimate and the harvest, but this season we really need to stress the difference between our estimating a decent crop in early April, and the many limiting factors having an effect on final crop that gets harvested. We are confident in our number today, but there are a lot of significant unknowns, and our crystal ball unreliable – such that it might not reveal a wet and benign summer, nor the dry and searing one that is almost presupposed; and we certainly cannot forget about “black swans”, which seem to lurk around every corner, waiting to avian mug us...

For now, we apologize for any omissions or errors, and dissenting views are welcome, and will be given consideration; as ever, we offer a money back guarantee for dissatisfied subscribers.

TNT/GLM