

## REPORT FROM THE FIELD

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By  
Michael Powell

Although, in the last PR/MDIA Newsletter's Report From The Field, I said that I would discuss another recent exchange of Poppy Reserve field research results in this newsletter, I thought everyone might be more interested in what has happened at the Poppy Reserve this early fall/winter and how it might impact next spring's poppy displays so I'll put off discussing the data exchange until a later newsletter.

Even before this winter's much media heralded El Nino storms, the Poppy Reserve has already had five rain storms between 1 Sept and 15 Nov. Three of these storms deposited less than 3/8 of an inch of rain; far less than that expected to trigger any poppy seed germination. In contrast, a storm on 15 Oct deposited 2.37 inches of rain at the maintenance yard weather station and a 3 Nov storm deposited 0.29 inches of rain. Based on past years' field observations, a substantial amount of poppy seed germination was expected after the 15 Oct storm. Although minimal germination would be expected after the 3 Nov, it was still important because it gave the young germinated poppy plants a good watering. In past years, even newly germinated poppy plants have been able to survive dry spells of three to four weeks without fatal damage.

Because it normally is expected to take 7 to 10 days following a storm to first observe emerged poppy cotyledons, it was a pleasant surprise to already see poppy cots during our 20 Oct visit to the Reserve. Although a very large number of filaree cots were observed throughout the Reserve, only a limited number of poppy cots were observed. Again, based on past years field observations, a lot more poppy seed germination was expected than found. The amount of poppy seed germination increases starting from storms depositing approximately 0.5 inches of rain with a peak in germination between 1 and 2 inches of rainfall. Above that amount, the poppy seed germination begins to decrease again but I would have still expected a large number of poppy plants following the 2.37 inch storm. Instead, only 25 to 30 poppy plants were found in three of our 1m<sup>2</sup> monitoring plots that were inventoried during that visit and subsequent visits. In contrast, up to 200 new poppy plants have been found in our monitoring plots following a single storm with optimum rainfall. Besides the filaree and poppy plants, fiddleneck, pygmy-leaved lupine, and goldfields cots were also observed growing in addition to the expected annual grasses.

Because of the complex geography of the Reserve, substantial variations in rainfall have been previously observed across the Reserve. With the storms typically coming from the west, the western portion of the Reserve normally receives more rainfall than the east ridge portion. Unfortunately, our research weather stations' rain gauges were not re-installed at the time of the 15 Oct storm so the only rainfall data available from that major storm is from the permanent weather station located in the Reserve's maintenance yard. Typically, the collection rain gauges are removed from our research weather stations early each summer and cleaned before being re-installed in the fall time. Our rain gauges were re-installed during the 20 and 31 Oct visits so we have more rainfall data for the Nov storms. The maintenance yard weather station recorded 0.29 inches of rain from the 3 Nov storm while the research weather stations recorded 0.36, 0.26 and 0.034 inches. The 0.034 inches was recorded at our east ridge weather station; just 11% of the maintenance yard value. During the weaker 15 Nov storm no rainfall was recorded at the east ridge weather station and the other two research weather stations recorded 0.10 and 0.05 inches; compared to 0.10 at the maintenance yard weather station.

Even more surprising than finding emerged filaree and poppy cots only five days after the 15 Oct storm, during the 20 Oct visit we found a number of fully mature filaree plants with these plants already blooming and fruiting during the subsequent Reserve visit on 31 Oct. This raises the question "When did these plants germinate?" Although it is possible they germinated following the 15 Sept storm, which deposited only 0.18

inches of rainfall, that is a very short time period for these plants to fully mature and the rainfall from that storm seems too little to trigger even filaree seed germination. Reviewing past years' rainfall profiles and noting when the first filaree blossoms were subsequently observed, it appears that it takes two to three months following seed germination for a filaree plant to mature and first blossom. An alternative answer is that these plants grew from seeds germinated following a 20 July thunderstorm that deposited 1.25 inches of rainfall at the Reserve. If true, these plants survived almost two months of summer heat without any additional moisture until the 15 Sept storm. These plants not only survived but continued to grow and thrive; very impressive.

The fall months present some of the best weather for visiting the Poppy Reserve; moderate temperatures and mild winds. If you do visit, sharp eyes can see several different species of butterflies or moths, numerous lizards, a variety of different species of insects, and ants busily getting ready for the winter months. The Reserve's rodent population seems to be holding their own. With the lizards and rodents come the wintering raptors. On one trip back to Lancaster from the Reserve, we observed raptors pole sitting on three consecutive power poles; a first in several years. Besides the raptors, the Reserve has a nice population of other bird species as well this fall so good bird watching.