

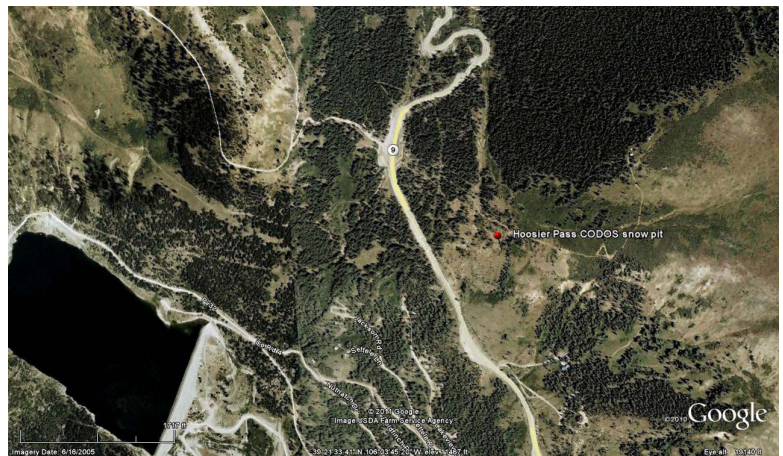
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CODOS UPDATE FOR HOOSIER PASS: VISITED MARCH 14, 2012

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SUMMARY

Dust layer D4 (March 6) was observed, with its characteristic brown/pink color, at the surface of the snowcover at our Hoosier Pass CODOS site and on surrounding terrain, where snowcover was present at all. The very large proportion of exposed bare ground in the Mosquito and Ten Mile Ranges is also likely contributing some additional "local" dust and vegetation material to adjoining snow covered terrain during wind events. Melt-freeze cycles and free water percolation had modified the upper snowpack but the snowpack still retains cold content. Since our site visit, a new D5 event (March 18) has landed on the D4 surface, entrained in just a few inches of new snow. Dust-enhanced radiative forcing of snowpack warming will resume later this week as D5/D4 re-emerge.



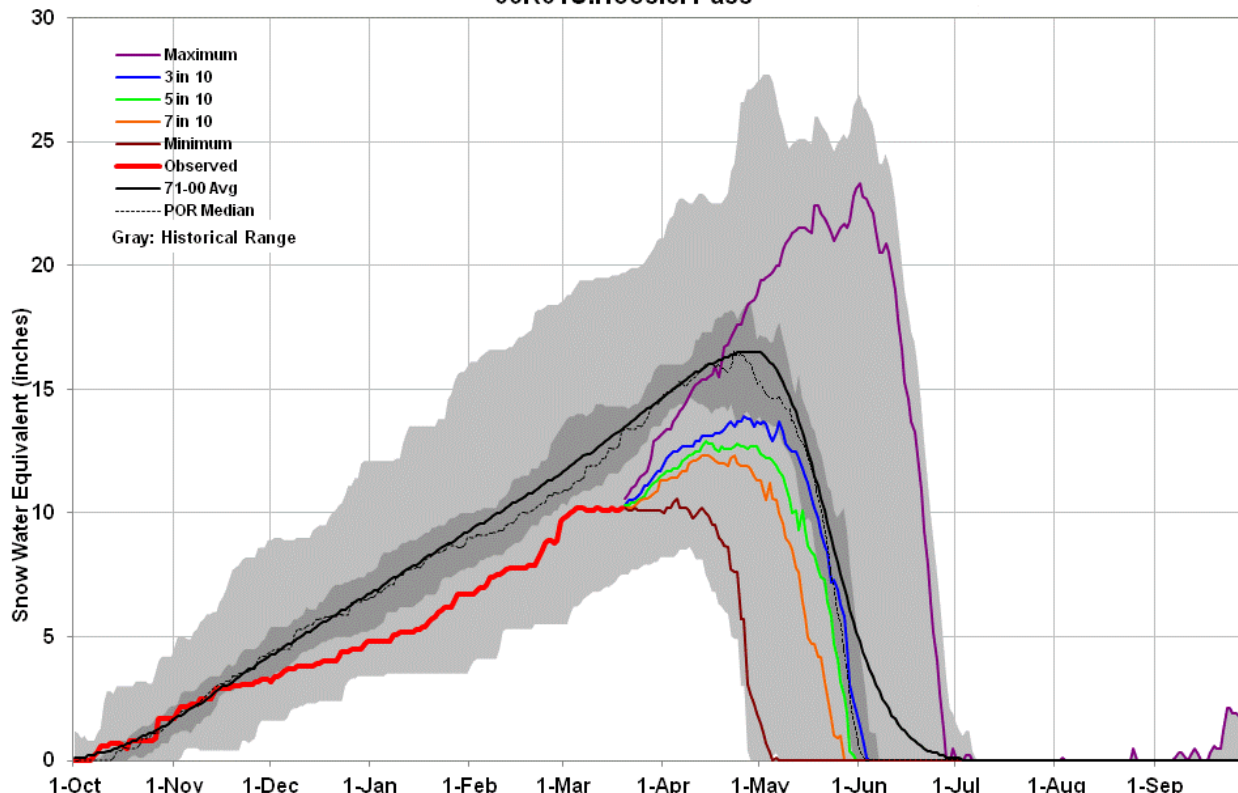
SNOWPACK DISCUSSION

Total snow depth in this snow profile ([pdf](#)) was 41" and mean density of the snowpack was 273 kg/m3 (27.3% water content). Diurnal melt-freeze cycles had produced a light melt-freeze crust at the surface, and an ice layer some 8" below the surface, but the remainder of the snowpack consisted of very weak, dry "depth hoar" grains. The coldest snow temperature was -7.0° C, just below the surface and the mean snow temperature was -3.7° C. D4 was found in concentrated deposits at the snow surface at this site and in surrounding terrain, where it had deposited in depressions or patches. Only one additional possible dust layer was discernible lower in the snowpack, a few inches above the ground.



MELT RATE

Hoosier Pass Snotel has reported virtually static SWE since the D4 event, March 6, until receiving a few inches of new snow Sunday, March 18, in association with D5. This new snow containing D5 will rapidly merge with D4 and solar energy absorbed by that dust will continue to accelerate the warming of the snowcover until becoming isothermal. At that time SWE losses would also accelerate, given that D5/D4 remains exposed at the snowpack surface.



This is an automated product based on SNO TEL data, provisional data are subject to change. This product combines the historical period of record data (gray background) with the recent daily data (heavy red, left) to project into the future (colored lines, right). This product does not consider climate information such as El Nino or short range weather forecasts and therefore should only be used as a seasonal planning tool. Contact Jim Marron at por.usda.gov 503 414 3047

FORECAST

The National Weather Service expects sunny skies and unseasonably warm temperatures to return soon after the current storm clears (Tuesday, March 20). Under the combination of strong solar radiation and warm air temperatures later this week, settlement of new snow containing D5 will be very rapid and D5 will quickly merge with the D4 layer. Where snowpacks in this locale are already at or very near isothermal temperatures, solar energy absorbed by the emerging D4/D5 dust will begin and/or accelerate snowmelt rates and SWE losses. Where the snowpack retains cold content, energy absorbed by that D5/D4 dust will continue to accelerate warming of the snowcover.