Supercool Earth

reliable precipitation

Supercool is making it rain and snow on demand

More water from clouds

Our protein based cloud seeding technology can increase precipitation in targeted locations

Protein, found in nature

Pure protein, biodegradable, non-toxic

Precipitation delivery platform

We produce the protein, run the seeding operations, and deliver the water.

As a water innovation leader with a discrete local watershed and a need for additional water, Santa Fe is an ideal pilot partner for Supercool. Early adopters like Santa Fe will shape how this technology is deployed. Supercool will begin field trials this winter with utilities, water districts, and ski resorts.

A snapshot of Supercool Earth

Mission

To make water supply more predictable

More Water

2x more water than traditional cloud seeding. We can reach warmer clouds that older methods cannot, with a more active protein

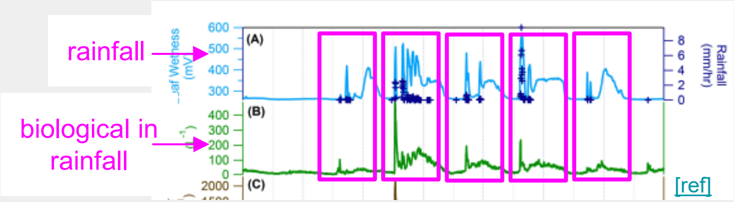
What are we doing?

Next-generation cloud seeding using a natural, biodegradable protein. We are not using the persistent chemicals used in traditional cloud seeding

Why are we doing it?

Weather is growing less predictable and water is a resource under strain. We help deliver it to the communities that need it.

Supercool’s protein naturally occurs in snowpack, rain, and soil.



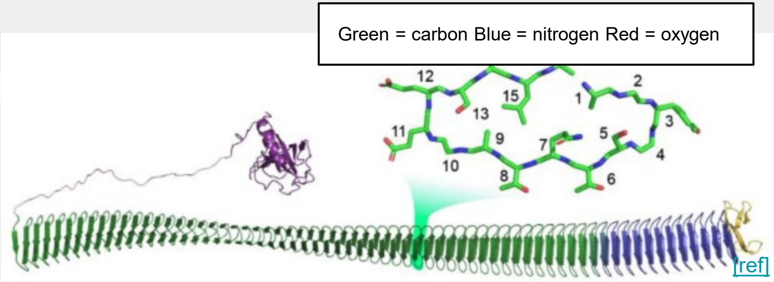
Biologicals found in rainfall in Colorado

Researchers have detected ice nucleating biological particles in snow, rain, hail, and cloud water at sites in Virginia, Montana, Canada, Colorado, Antarctica, and France.

No study has looked and failed to find them. New Mexico has not been sampled specifically, but it has in neighboring Colorado, where the particles were also present,

Soil microorganisms produce these ice nucleating particles. Natural processes lift them into the atmosphere, where they reach clouds. This is a natural mechanism. It contributes to precipitation formation.

Supercool’s protein breaks down rapidly in soil and water



Proteins are made up of carbon, nitrogen, oxygen, hydrogen, and sulfur

Proteins are inactivated and broken down via two methods:

A.) Native microbial degradation is the main method:

1. Microbes release enzymes to chew up proteins
2. Proteins are broken into amino acids
3. Natural microbes eat the amino acids

B.) Chemical processes will also break down proteins by sun exposure (UV radiation), pH, minerals, and temperature.

See full reference list on slide 8

Supercool's proteins are safe for the watershed. The key question is - *how much snow we can make in the target area?*

Primary Mission Parameters:

Delivery method: Fixed-wing drone with an onboard protein dispersal system

Flight path: West of the watershed, targeting atmospheric conditions that direct precipitation onto the catchment area in Feb-March 2027

Mission duration: 30 minutes maximum, single flight line

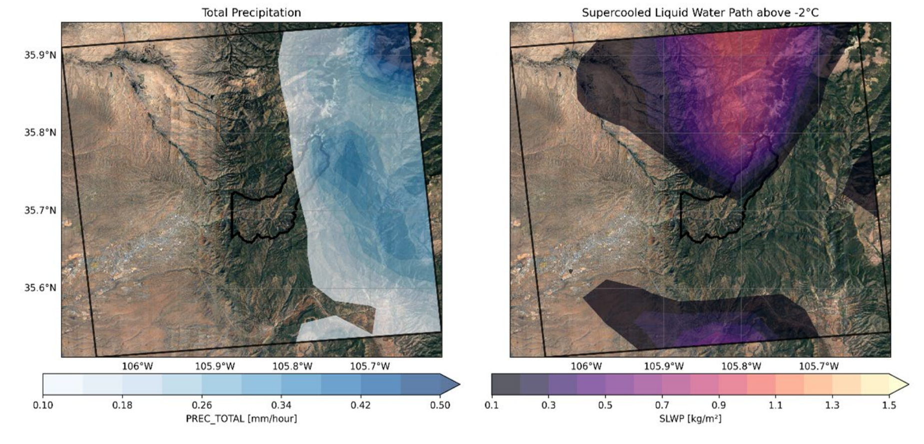
Protein volume per mission: Approximately 100 grams (roughly the size of a golf ball) for a 20km long flight line

Supercool's dried powder protein formulation

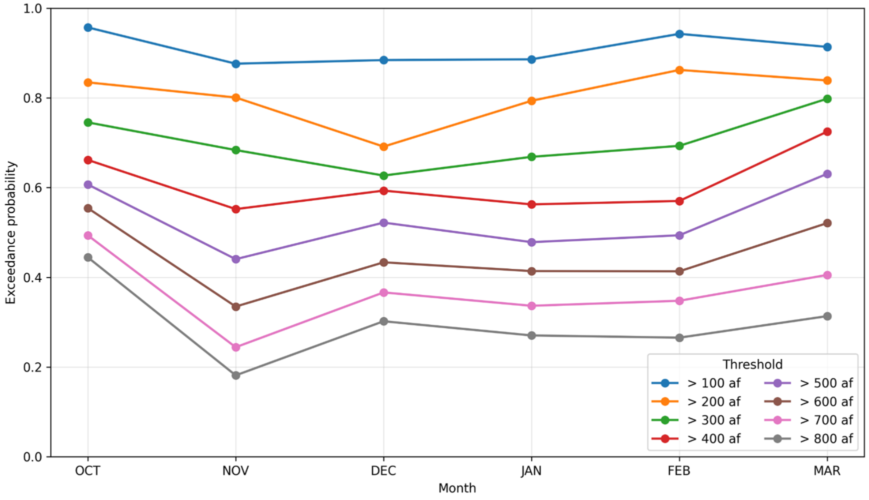
Supercool's fixed wing plane from Applied Aeronautics
(10kg max weight)

200 AF/Month: Achievable Based on Historical Storm Patterns

Natural precipitation and supercooled liquid water for a single hour. Supercooled liquid water is cloud water that stays liquid below freezing. Seeding turns it into snow.



Estimated Precipitation Enhancement for Nichols and McClure Basins



- Generating lower amounts of precipitation has higher success rates
- The probability that we can generate more than 200 AF/month is high (~80%)
- Generating more than 600 AF/month is likely (>40%)

Proposed SF Watershed Pilot

February or March 2027

Estimated Water Yield: 50-200 AF

Cost: $5000, or approximately $50/AF assuming ½ of extra snow ends up in McClure (instead of sublimating or evaporating before it gets there)

Value: Santa Fe River Water is preferred source for utility. Energy costs to move BDD water up to Santa Fe are approximately $100 - $400/AF depending on time of day and year, so paying $50/AF for more water in McClure is, according to City of Santa Fe Water, a “no-brainer”

Attribution: We compare observations (surface gauges and weather radar) with simulated seeded and unseeded outcomes to estimate each mission’s seeding impact and its statistical significance.

No-Go: If El Nino delivers a wet winter and as of February 1st City of Santa Fe Water expects to be able to fill Nichols and McClure, the pilot will be pushed to 2028

Permit Status

Category	Permit	Status (as of 08-28-2026)
Protein	EPA TSCA - for commercial use only	Not required during R&D phase
Drone	FAA altitude and BVLOS waivers	Filing in progress
New Mexico	NM Cloud Seeding Permits	Active engagement with Interstate Stream Comm
New Mexico	Forest Service Permit	Preparation underway
New Mexico	Determination of Nominal Effects	Preparation underway

Supercool will not conduct field operations until all required permits and determinations are secured. We are committed to transparency with regulators, partners, and the public throughout our work.

Team Supercool combines scientific rigor with a commitment to the environment

Dacia Leon, PhD

Co-Founder / CEO

Molecular biologist. Product builder. 7 years in biotech.

Zymergen • Decibel • Sound

Wolfgang Langhans, PhD

Head of Atmospheric Science

Cloud physicist. Weather modeling expert. 15+ years in atmos science.

Berkeley Lab • Sofar

Olaf Dietz

Hardware Engineer

MechE student. Dispersal system design and integration.

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Michelle Grau, PhD

Co-Founder / CTO

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Zymergen • Hexagon Bio

Steph Patchett, PhD

Senior Scientist

Molecular biologist. Protein expression expert.

UT Austin · NYU Med School

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