Climate Change and Water in Greater LA

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Loss of Snow





Adaptation Is Necessary Snow at April 1



Earlier Shift in Runoff Timing



Schwartz et al. 2018

Snowpack Severely Impacted During Drought

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Berg and Hall 2017

What Happens During a Wet Year?



2016-2017

Huang et al. 2018

More Extremely Wet Years like 2016-2017

2016-2017 was an extremely wet year in California.

It produced a magnificent super bloom.

The abundant wintertime rain also stressed dams.

Swain et al. (2018) Increasing Precipitation Volatility in 21st Century California. Nature Climate Change. https://www.hcn.org/articles/p hotos-superbloom-incalifornia By William Croyle, California Department of Water Resources California Department of Water Resources

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More Extremely Dry to Extremely Wet Years: "Whiplash"



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Whiplash events could be up to 2x more frequent by late-century



Water Resource Impacts

Imported water

- Most water in the LA region is imported from the Sierra and the Colorado River.
- Sierra snowpack is a key component of the water storage system.
- Diminished snowpack means there's less springtime/summer snowmelt to keep reservoirs replenished.
- Earlier pulses of runoff are great challenges to water managers, who are trying to store as much water as possible in reservoirs while also preventing floods.
- Increased dry and wet extremes add to these challenges.

Water Resource Impacts

Local water

- Local water is currently an underutilized resource. Water managers are trying to make greater use of it through stormwater capture and other efforts.
- Increased extremes make stormwater capture more difficult.
- More frequent and intense wet extremes increase the risk of local flooding.
- Hotter temperatures increase water demand of agriculture and landscape vegetation.

A broader discussion of climate change impacts is available in the CA 4th Assessment's chapter on the LA region: www.climateassessment.ca.gov/regions

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More Manageable Changes Under Mitigation Snow at April 1

Business as Usual

Historical Data

70% 100% 36%

> Baseline 1981-2000

Mitigation