Useful Climate Forecasts: How Far (Out) Can We Go?

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Near Normal

Dry

Really Dry
Drought vs. Flood

- Droughts are bigger
- Droughts last longer
- Droughts develop slowly
- Short-range prediction opportunity: flood
- Long-range prediction opportunity: drought
The S2S Prediction Gap

WEATHER EVENTS
Individual storm events: blizzards, rainstorms, hurricanes

S2S EXTREMES
Tropical cyclone activity, heat waves, storm tracks, severe weather threats

SEASONAL OUTLOOKS
El Niño-Southern Oscillation, temperature and precipitation anomalies

Source: Mariotti et al. 2018 npj/cas
Maximum Predictable Probability?
(1-y flood on a given day)
Maximum Predictable Probability?
(100-y flood on a given day)

- 100%
- 10%
- 1%
- 0.1%

Time periods:
- 3 hours
- 1 day
- 1 week
- 1 month
- 1 season
- 1 year
- 1 decade
- 1 century
Maximum Predictable Probability?
(100-y drought in a given year)

3 hours  1 day  1 week  1 month  1 season  1 year  1 decade  1 century
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