The Colorado Floods
The Storms of June 14-20, 1965
NWS Denver/Boulder
Climate of the Region

- The mountain region usually receives about 50 inches of precipitation annually.
- The lower foothills receive 14-20 inches.
- The eastern plains are accustomed to light rainfall, around 15 inches of precipitation annually.
Antecedent Rainfall

- From May 21 to June 3, light rains were consistent over the entire region (some locations recorded over an inch!).
- On June 4 & 5, heavier rains occurred; 2 inches reported in some locations).
- Over the remainder of the month, the region witnessed lighter rain up to the arrival of the storm June 14.
Flooding Locations
South Platte Basin

- Flooding occurred in 4 main regions:
  - North of Greeley and north/west of Sterling
  - Plum Creek and Cherry Creek basins
  - Kiowa Creek and Bijou Creek basins
  - South Platte River from Plum Creek to Nebraska
South Platte River Basin Flooding

- Plum Creek and Cherry Creek
- Kiowa Creek and Bijou Creek

Rainfall Regions:
- Red: June 14-15
- Green: June 16
- Blue: June 17
Rainfall Observations

- 6/15  Elbert County: 6” in 30 minutes
- 6/16  Larkspur & Castle Rock: 14” in 4 hours
- 6/16  Douglas County south of Castle Rock: 14” in 4 hours
- 6/17  Holly: 11.08” in 6 hours

From UCAR Assessment
Greeley/Sterling
June 14-15

- Storms formed south of the Colorado/Wyoming state line.
- These areas witnessed heavy rain and hail.
- A cold front formed, and became stationary on the 15th.
Plum Creek & Cherry Creek

June 16

- Storms were centered over Plum & Cherry Creek
- Stationary because of a lack of a westerly wind
- Main floodwaters that came through Denver originated in Plum Creek
- Water from Cherry Creek was stored in the Cherry Creek Reservoir
Kiowa Creek & Bijou Creek

June 17

- Flood levels were moderate to high on June 15, but surged to extremely high on the 17th.
- The Palmer Ridge enhanced convection over the area south and east of Denver.
- These storms moved north, following the flow of the creeks.
South Platte River Flood

- The flood from Plum Creek reached metro Denver overnight on the 16th.
- Witnesses reported a wall of water 20’ tall travelling down the banks of the South Platte.
- At some points, the river was ½ mile wide.
Bridges Swept Away

- Nearly all east/west bridges through Denver were destroyed by floodwaters.
Structural Damage

Across the state, 2,500 homes were either damaged or destroyed.
Debris Piles

• Bridges were destroyed not because of poor quality, but because of pressure built up from debris.
Railways Inundated

- The rail yard in south Denver was completely flooded.
- 67% of flooding in Denver occurred in the industrial area.
Extent of the Floodwaters

The South Platte became ½ mile wide.

The peak on the South Platte River was described as a wall of water 20’ high.
Flood Damage Cost

In the South Platte basin, damages totaled $508.2 million. $300 million of this damage occurred in metropolitan Denver.
Fatalities

There were a total of 21 deaths attributed to the week’s flooding.

Eight of these deaths occurred along the South Platte River; 6 were by drowning.
Cherry Creek Reservoir

- All of the excess flow from Cherry Creek was stored in the Cherry Creek Reservoir.
- The building of this dam was controversial, but proved its worth during this flood.
- Damage in Denver would have been astronomically greater without it.
Chatfield Dam & Reservoir

- Construction began in 1967, as a direct result of the 1965 flood.
- The dam and reservoir were completed in 1975.
- Located south of Littleton, the inflow comes from Plum Creek and the South Platte River.
Flooding Locations
Arkansas River Basin

- Flooding occurred in 5 areas:
  - North of Pueblo
  - Purgatoire River
  - Arkansas River from Las Animas to the state line
  - Arkansas River from Pueblo to Great Bend, KS
  - Canadian River in New Mexico
Arkansas River Basin Flooding

Rainfall Regions
- Green: June 16
- Blue: June 17
- Yellow: June 18

Map created by Jessica Smith
## June 1965 Flow Rates
Arkansas Basin

<table>
<thead>
<tr>
<th>Location</th>
<th>June 1965 Peak Flow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fountain Creek near Pueblo</td>
<td>80,000</td>
</tr>
<tr>
<td>Purgatoire River at Trinidad</td>
<td>15,700</td>
</tr>
<tr>
<td>Two Butte Creek at Two Butte Reservoir</td>
<td>182,000*</td>
</tr>
<tr>
<td>Arkansas River at the John Martin Reservoir</td>
<td>104,000</td>
</tr>
</tbody>
</table>

*This is the flow rate of Two Butte Creek after the flow had already overtopped the reservoir.

Data from the UCAR Assessment
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