

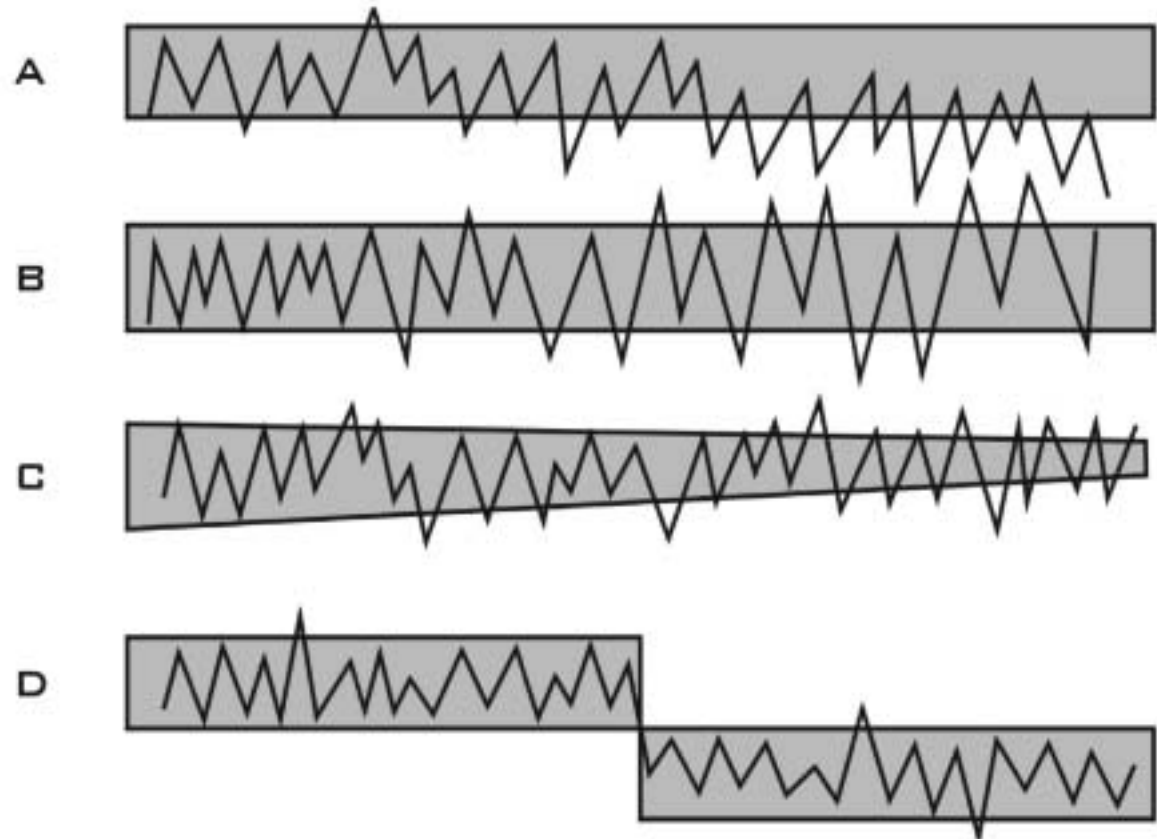
Slow Onset Disasters: Planning Challenges and Issues of Public Engagement

Roger A. Pielke, Sr.
Professor and State Climatologist

Presented to the 29th Annual Workshop on
Hazards Research and Applications,
Boulder, Colorado, July 13, 2004

Fig. E.5.

A schematic illustration in which risk changes due to variations in the physical system and the socio-economic system. In all the cases risk increases over time (with modifications after Smith 1996)

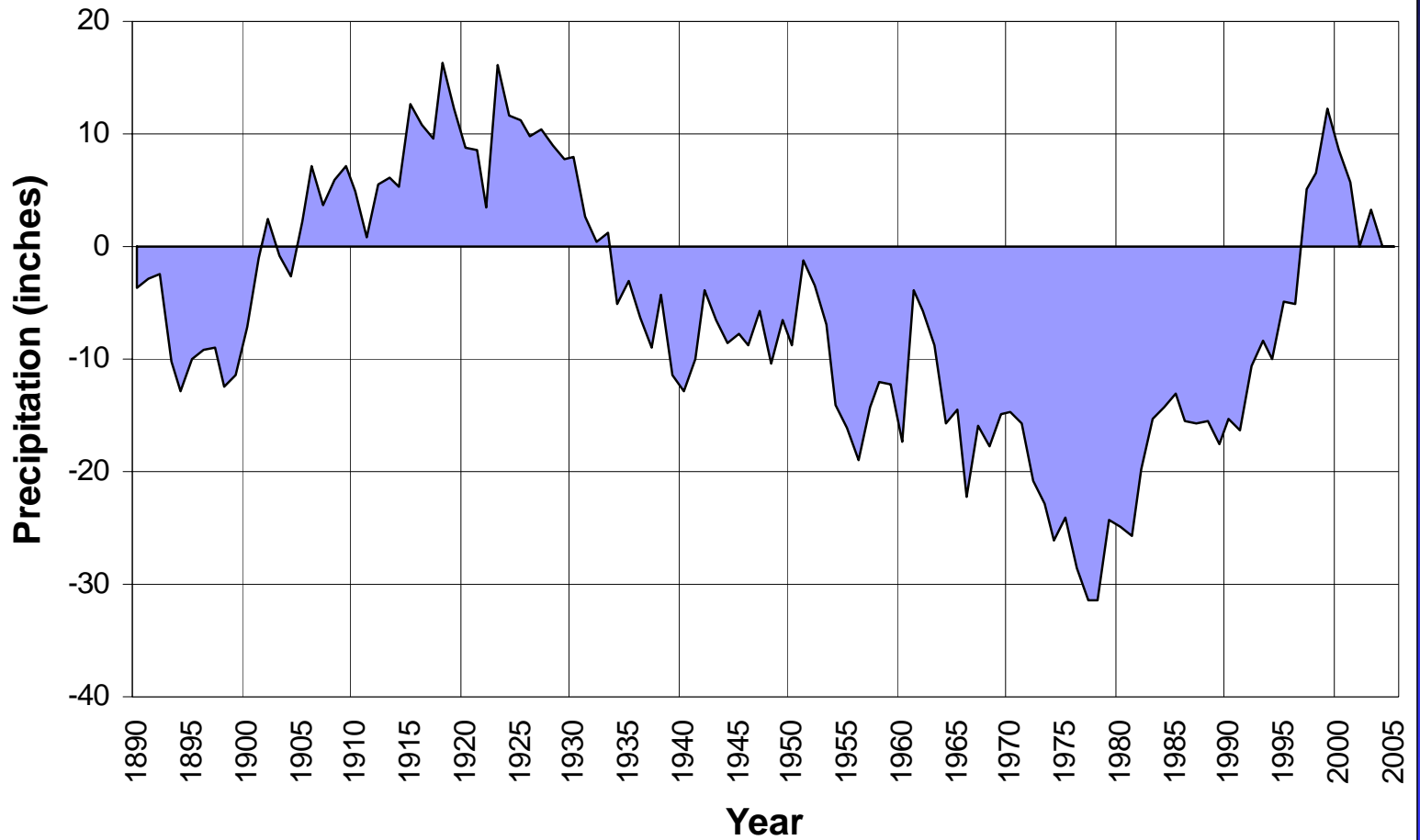


From: Kabat, P., Claussen, M., Dirmeyer, P.A., J.H.C. Gash, L. Bravo de Guenni, M. Meybeck, R.A. Pielke Sr., C.J. Vorosmarty, R.W.A. Hutjes, and S. Lutkemeier, Editors, 2004: Vegetation, water, humans and the climate: A new perspective on an interactive system. Springer, Berlin, 566 pp.

Fort Collins

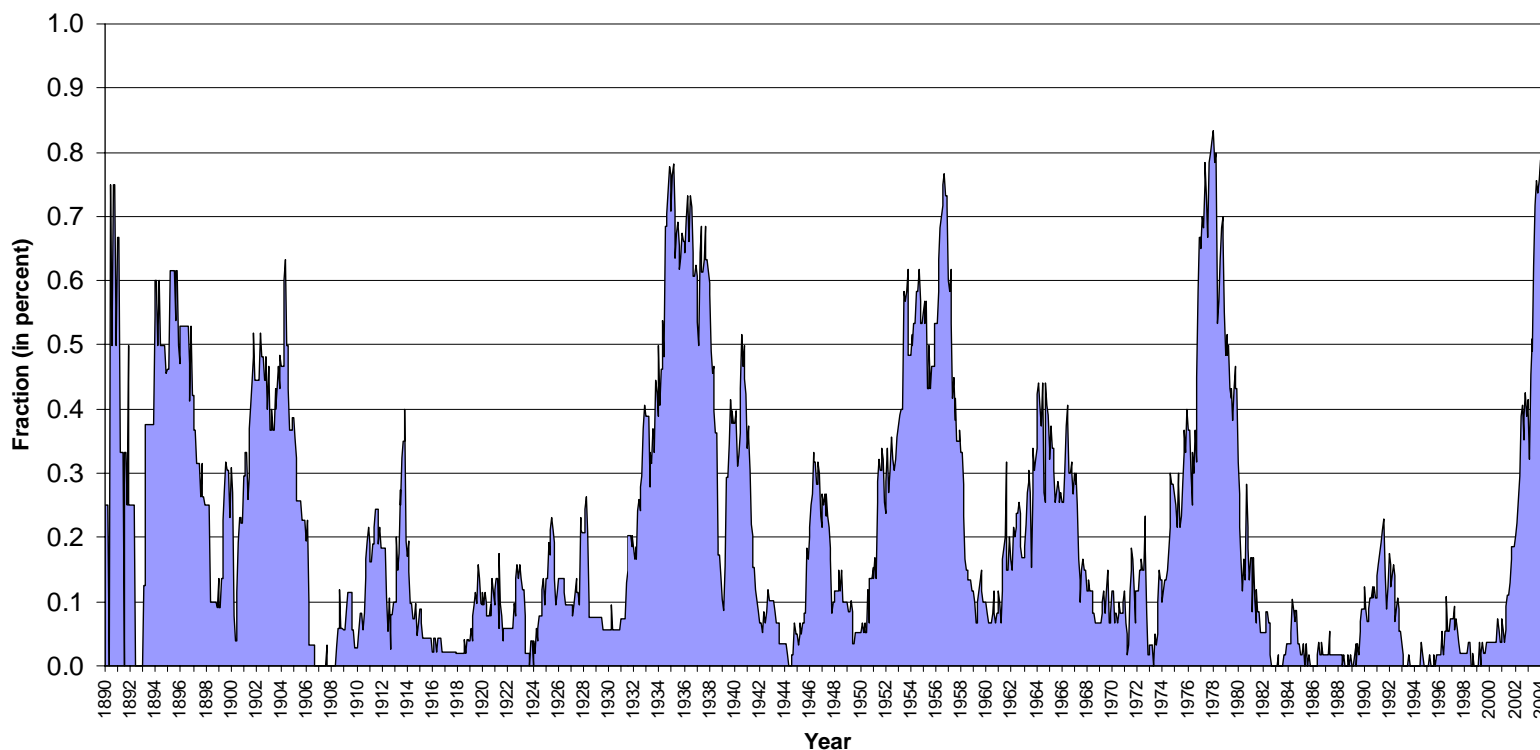
Accumulated Precipitation Deficit

(Average 1890-2003)



Fraction of Colorado in Drought

Based on 48 month SPI
(1890 - May 2004)



Fraction of Colorado in drought based on 48-month SPI from 1890 through May 2004). Calibration period 1961-2000. Data values produced by John Kleist.

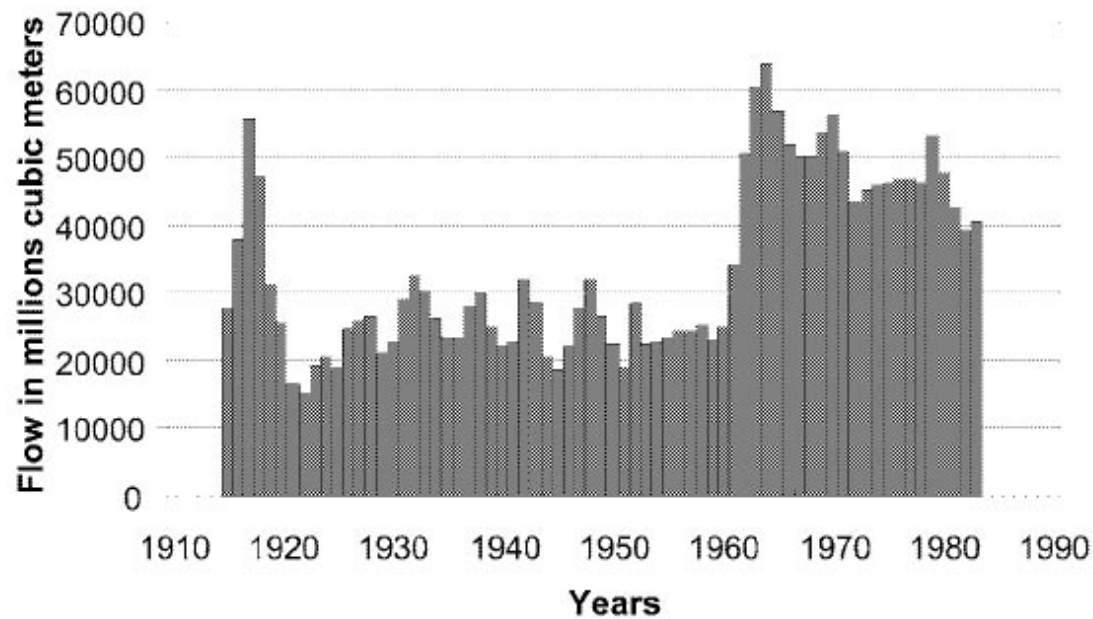
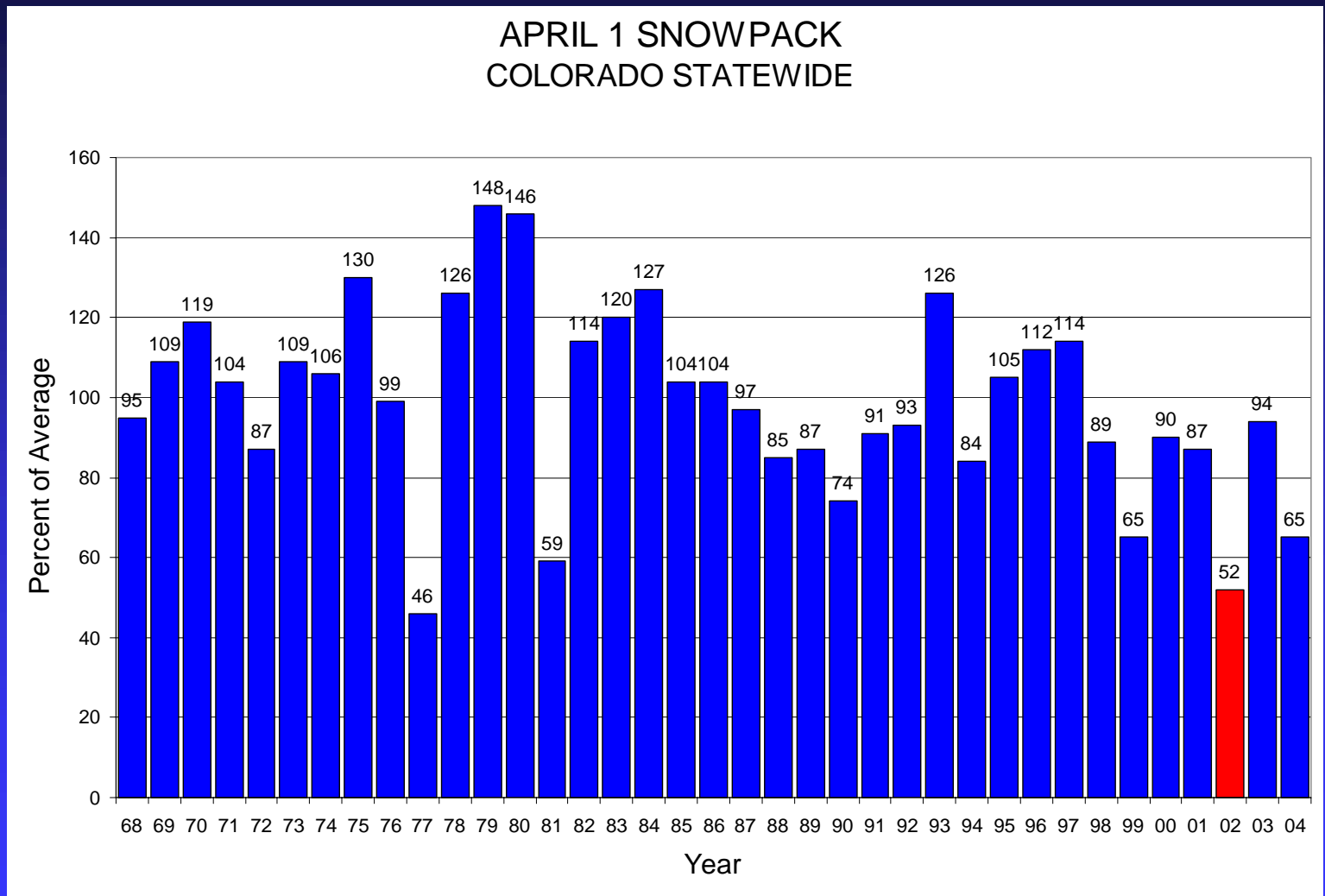


Figure 6. Time series of annual outflows from the African equatorial lakes measured at the Mongalla station for the period 1915–1983, showing an abrupt shift around 1961 and slow decaying downward trend (adapted from Salas et al. (1981). With permission).

From: Rial, J., Pielke Sr., R.A., M. Beniston, M. Claussen, J. Canadell, P. Cox, H. Held, N. de Noblet-Ducoudre, R. Prinn, J. Reynolds, and J.D. Salas, 2004: Nonlinearities, feedbacks and critical thresholds within the Earth's climate system. *Climatic Change*, in press.

April 1 Snowpack for Colorado, 1968-2004



Data from NRCS Snow Survey Division, <http://www.co.nrcs.usda.gov/snow/>

Poudre River Streamflow, 1884-2002

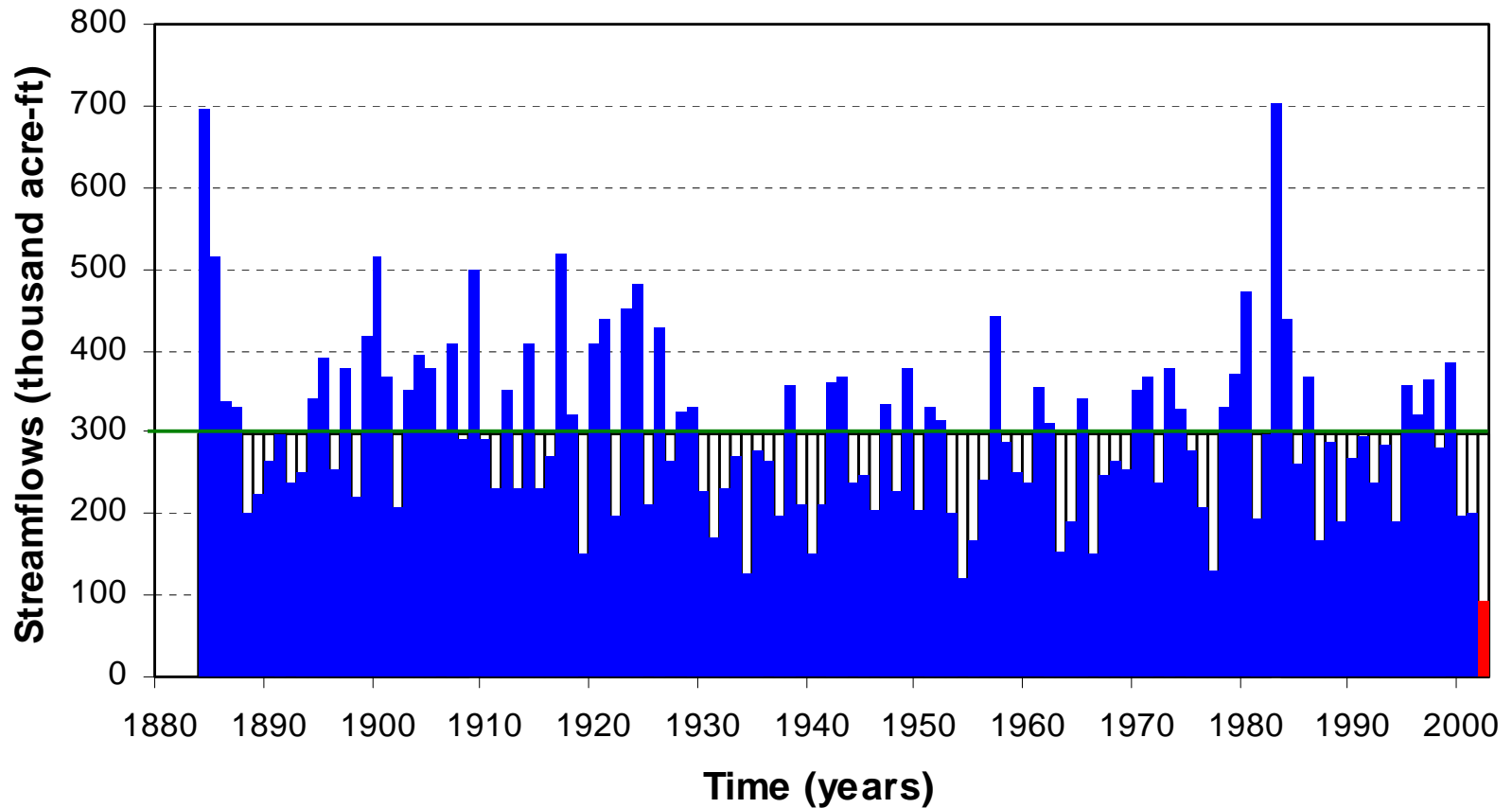


Figure 14. Annual flow records of the Poudre River for the period 1884-2002. The figure shows some extreme drought events such as those in the 1930s, 1950s, and the drought of the 2000s. Note that the 2002 flow is the smallest value in the entire record. (After Salas et al, 2003.)

From Pielke et al. 2004: Drought 2002 in Colorado - An unprecedented drought or a routine drought?
Pure Appl. Geophys., Special Issue, in press.

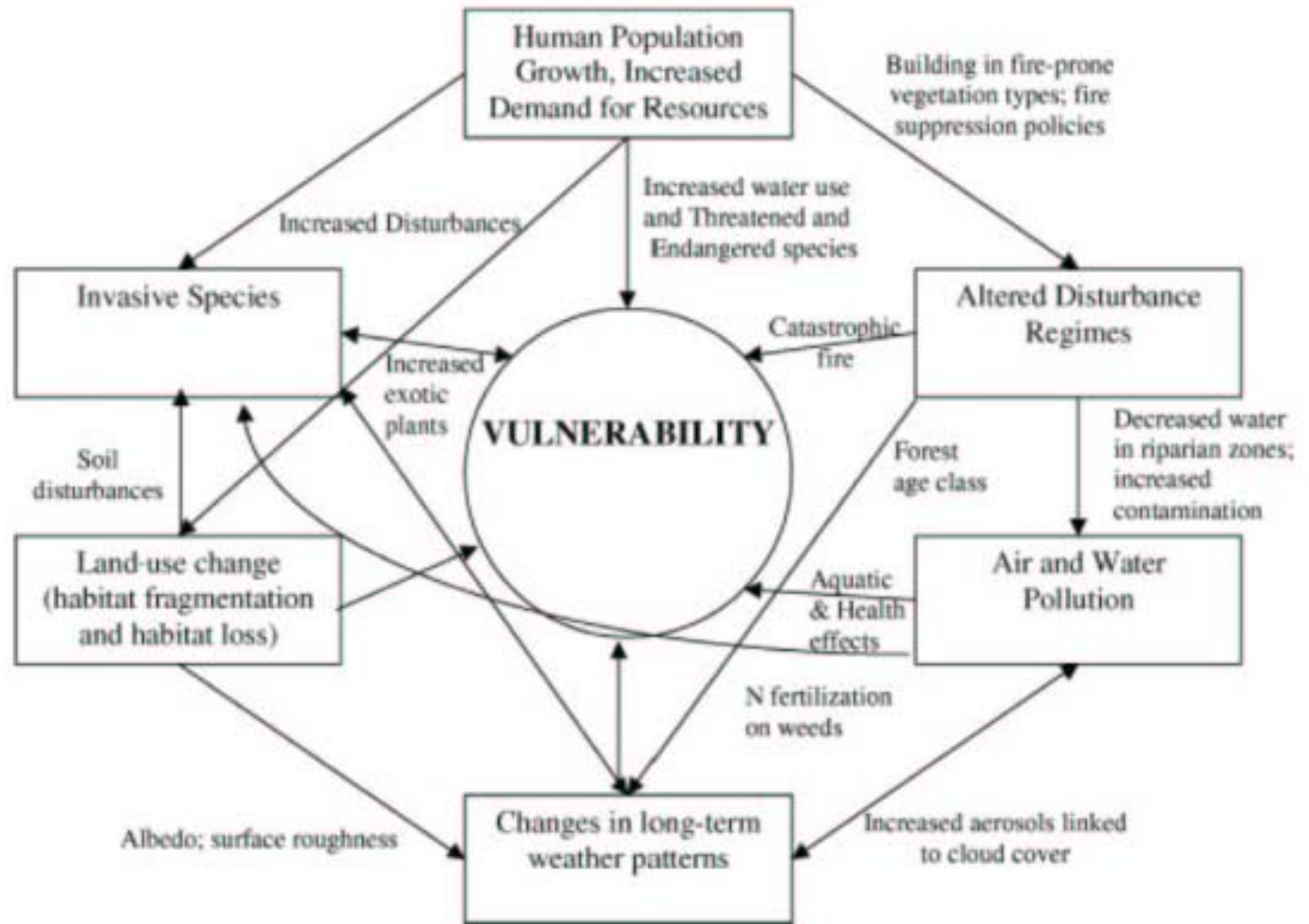
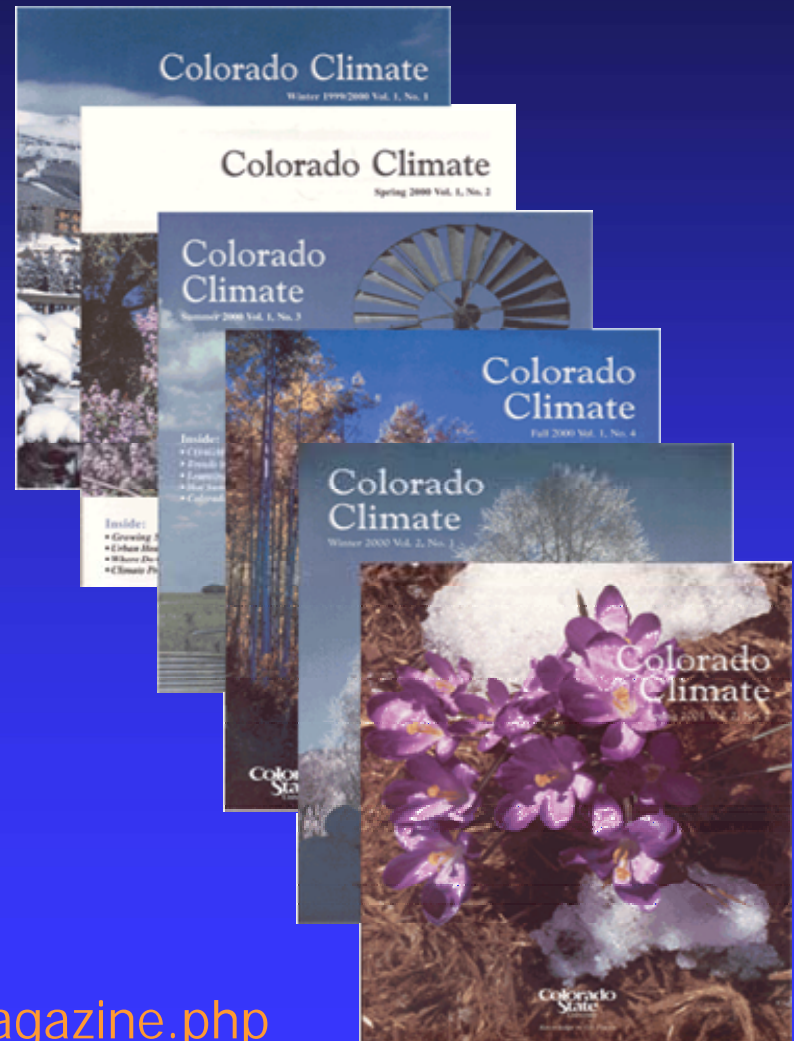


Fig. E.10. Existing and potential interactions among stresses

From: Kabat, P., Claussen, M., Dirmeyer, P.A., J.H.C. Gash, L. Bravo de Guenni, M. Meybeck, R.A. Pielke Sr., C.J. Vorosmarty, R.W.A. Hutjes, and S. Lutkemeier, Editors, 2004: Vegetation, water, humans and the climate: A new perspective on an interactive system. Springer, Berlin, 566 pp.

Colorado Climate Magazine

- Articles about the climate of Colorado -- recent and historic
- \$15/year subscription pays printing and mailing costs
- Phone: 970-491-8545 or email: odie@atmos.colostate.edu



<http://ccc.atmos.colostate.edu/magazine.php>

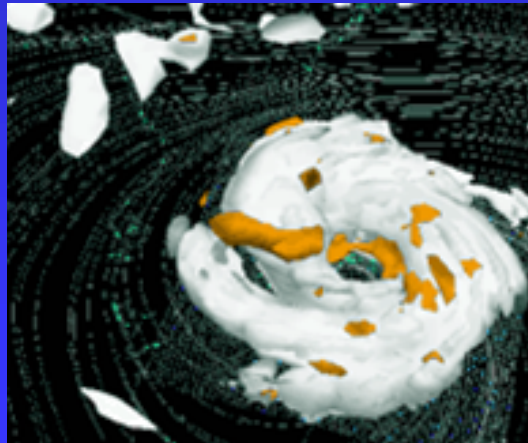
The Pielke Research Group

- Articles and Research Papers available:

<http://blue.atmos.colostate.edu>

Click on “Publications”

Click on “Presentations”



Colorado Climate Center

Data and Power Point Presentations available for downloading

<http://ccc.atmos.colostate.edu>

- click on “Drought”
- then click on “Presentations”

