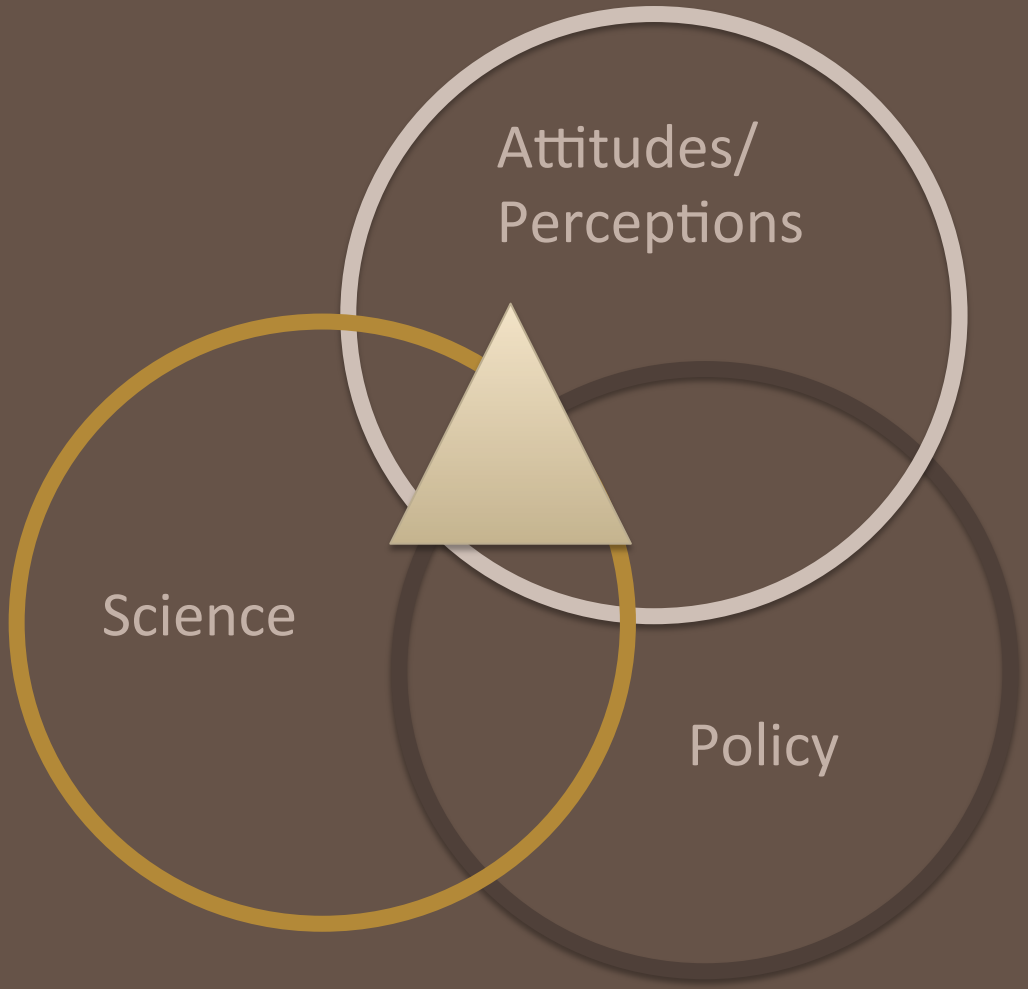
Let's Stop 'Solving' Water Management Problems

Kristan Cockerill
Appalachian State University

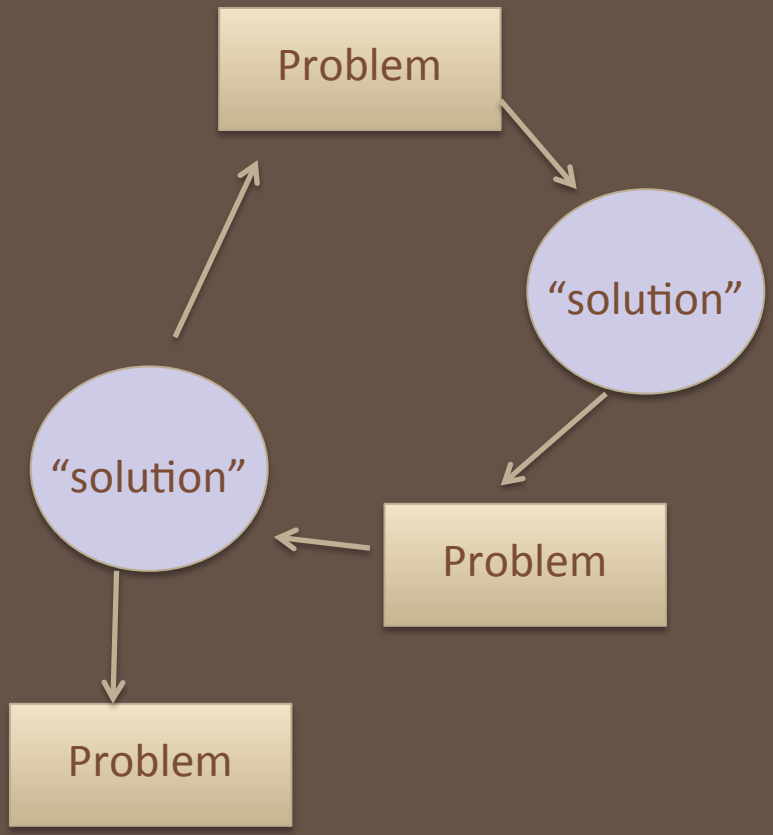

Attitudes/
Perceptions
Science
Policy

Solve *(v)*

to find a way to deal with *and end* (a problem)

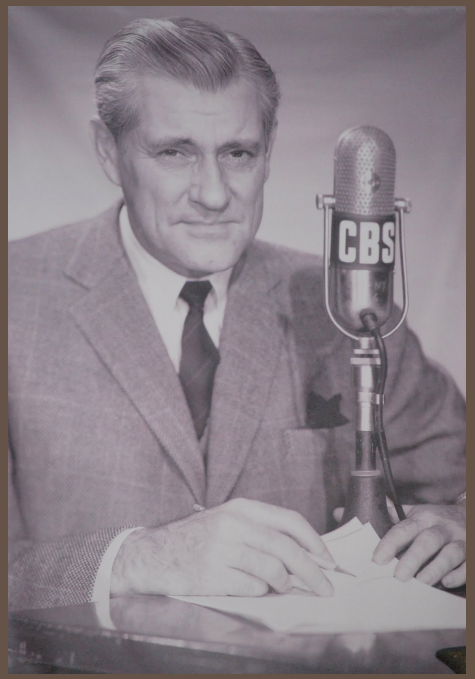
to find the correct answer to (something, such as a riddle)
to find the correct explanation for (something, such as a mystery)

http://www.merriam-webster.com/dictionary



"It is ironic that many of today's water problems arise from the very solutions we administer."

Vorosmarty and Pahl-Wostl, 2013



"The chief cause of problems is solutions"

Policy:

Water management is wicked….

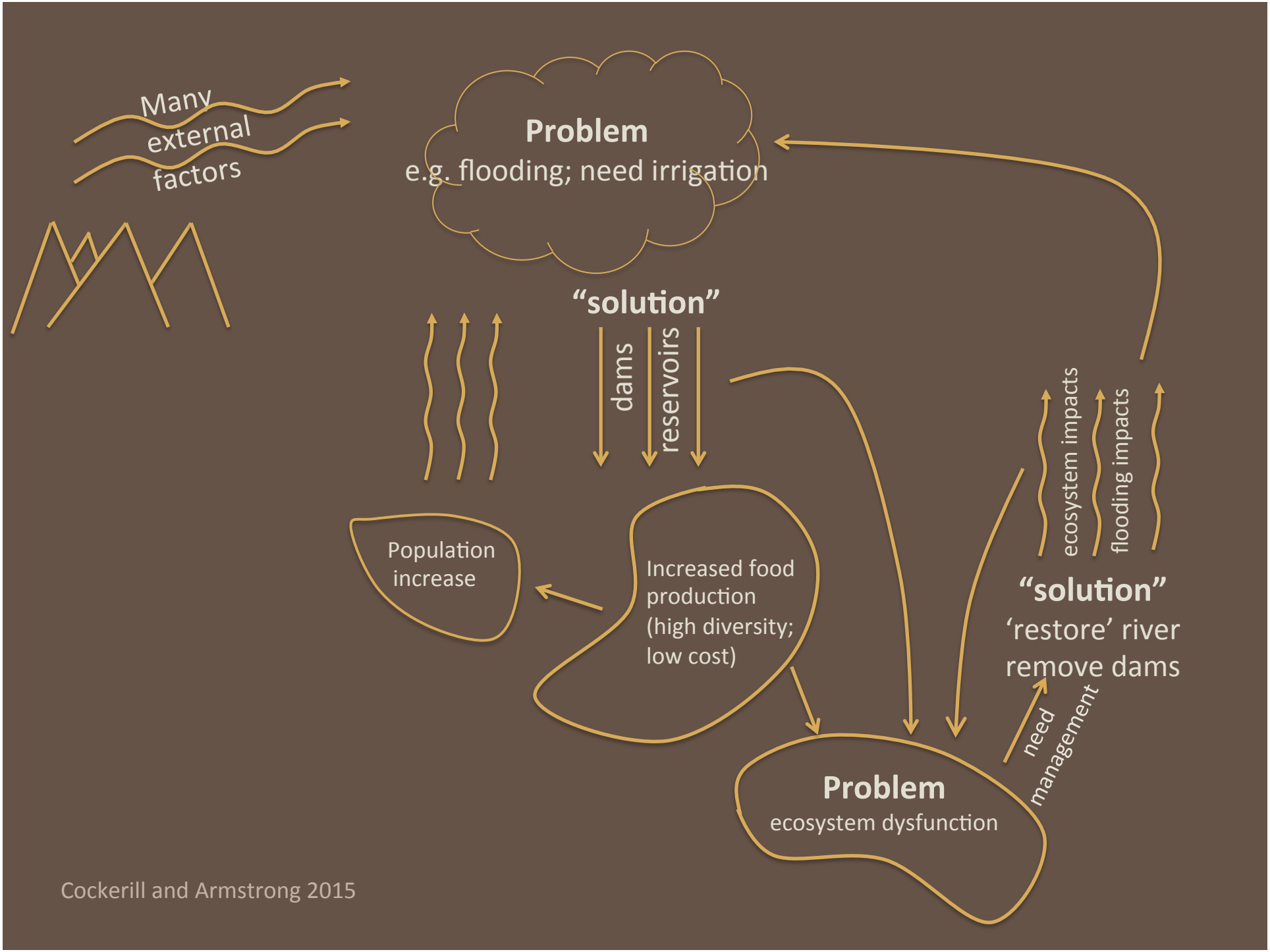
(…not that kind of wicked…)

wicked problems =

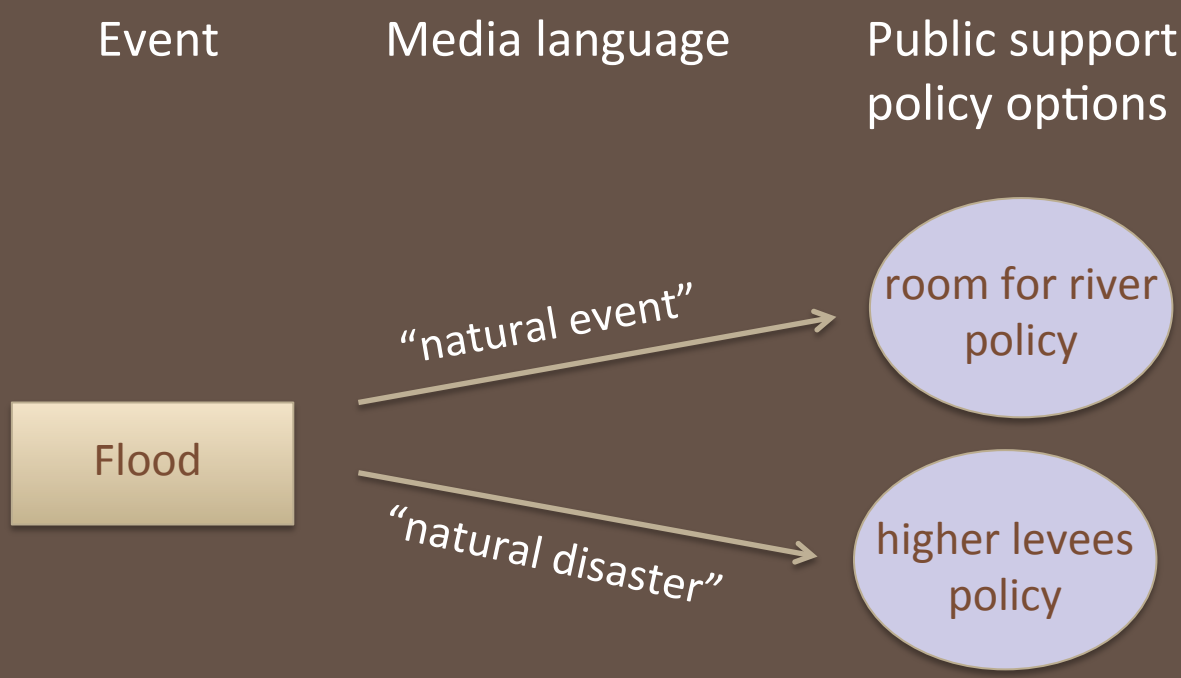
- intractable
- embedded in complex systems
- multiple definitions
- never fully solved…

"[a]t best they are only re-solved – over and over again"

Rittel and Webber 1973


Many external factors
Problem
e.g. flooding; need irrigation
"solution"
dams
reservoirs
Population increase
Increased food production (high diversity; low cost)
ecosystem impacts
flooding impacts
"solution"
'restore' river
remove dams
need management
Problem
ecosystem dysfunction
Cockerill and Armstrong 2015

Attitudes / Perceptions:
Language shapes perception:

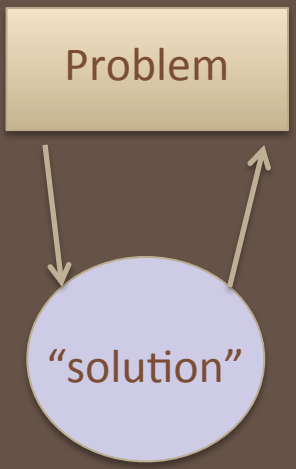


Cockerill 2000, 2003

Problem – solution language = self-referential

Problem framing requires:

- define issue as problem
- establish blame
- offer solution



Problem without solution =

- risk
- apocalyptic
- incomplete
- incorrect

Hard to avoid….

Benford & Snow 2000; Kensicki 2004; Dardis 2007; Riffe & Reimold 2008

Globescan / SustainAbility survey question:
"What are the technologies or changes in behavior which show the most promise for addressing water shortages over the next 10 years?"

News headline, Circle of Blue (2010):
"Experts name the top 19 solutions to global freshwater crisis"

"It is ironic that many of today's water problems arise from the very solutions we administer."
Vorosmarty and Pahl-Wostl (2013)

"'We need to move from problem identification to the co-design of evidence-based solutions'"
Pahl-Wostl quoted in Perez 2013

Problem

science

"solution"

Science expected to solve

Embrace complexity

Accept continuous challenge

Avoid using ‘solution’ language

Wicked problems need wicked good thinking, not simple ‘solutions’

Collaborators:

Mel Armstrong, National Park Service and UC Berkeley

Jen Richter, Arizona State University

Jordan Okie, Arizona State University