Climate Change Communication and the Comfort Zone

Christopher Jones, Extension Agent
University of Arizona Cooperative Extension

Extension Sustainability Summit
April 7, 2016 – Portland, OR
Climate Change?

<table>
<thead>
<tr>
<th>Urgent</th>
<th>Not Urgent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>III</td>
<td>IV</td>
</tr>
</tbody>
</table>

(Covey)
Urgent *or* Important

![Graph showing cycles of Have to Pee and Have to Sneeze]
Urgent *and* Important
Palmer Drought Severity Index

% of US in 10th percentile of severe drought or severe moisture surplus
Record Highs Outpace Record Lows by 2:1

1,800 weather stations in 48 states; 1/1950-9/2009

Meehl et al. 2009
Association of Natural Resource Extension Professionals

Climate Science Initiative (CSI)

sites.google.com/anrep/site.anrepclimate

Grassroots, loose association, not funded
Extension on climate change must:

• Speak (simply and visually) to diverse worldviews

• Provide opportunity for consideration of personal values

– Paul Vencelli, UK Ext. 2012
Global Warming’s Six Americas 2012

Leiserowitz, Maibach, Roser-Renouf, & Hmielowski, 2012

Proportion represented by area
Source: Yale / George Mason University
2012 Comparison of Six Americas Categories: U.S. vs. Southeastern Extension Professionals

How often have my communications:

• Been moralizing, critical, insulting, arrogant, or demonizing?
• Been political/partisan?
• Been respectful of diversity?
• Recommended particular policy solutions?
• Completely absent or avoiding the issue?
Communicating Climate Change

An introduction for Extension agents

(Powers, Layman and Monroe 2013)
What is your Communication Goal?

Environment of open-minded, unbiased consideration

There are things science can answer and things that ethics can answer...Temple Grandin

Strategy #1
Frame the issues
## Terms that have different meanings for scientists and the public

<table>
<thead>
<tr>
<th>Scientific term</th>
<th>Public meaning</th>
<th>Better choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>enhance</td>
<td>improve</td>
<td>intensify, increase</td>
</tr>
<tr>
<td>aerosol</td>
<td>spray can</td>
<td>tiny atmospheric particle</td>
</tr>
<tr>
<td>positive trend</td>
<td>good trend</td>
<td>upward trend</td>
</tr>
<tr>
<td>positive feedback</td>
<td>good response, praise</td>
<td>vicious cycle, self-reinforcing cycle</td>
</tr>
<tr>
<td>theory</td>
<td>hunch, speculation</td>
<td>scientific understanding</td>
</tr>
<tr>
<td>uncertainty</td>
<td>ignorance</td>
<td>range</td>
</tr>
<tr>
<td>error</td>
<td>mistake, wrong, incorrect</td>
<td>difference from exact true number</td>
</tr>
<tr>
<td>bias</td>
<td>distortion, political motive</td>
<td>offset from an observation</td>
</tr>
<tr>
<td>sign</td>
<td>indication, astrological sign</td>
<td>plus or minus sign</td>
</tr>
<tr>
<td>values</td>
<td>ethics, monetary value</td>
<td>numbers, quantity</td>
</tr>
<tr>
<td>manipulation</td>
<td>illicit tampering</td>
<td>scientific data processing</td>
</tr>
<tr>
<td>scheme</td>
<td>devious plot</td>
<td>systematic plan</td>
</tr>
<tr>
<td>anomaly</td>
<td>abnormal occurrence</td>
<td>change from long-term average</td>
</tr>
</tbody>
</table>

Sommerville & Hassol 2011
Scientists: “how well something is known”
Public: “not knowing”

To the public, less than complete certainty means scientists are not able to predict
Strategies for Communicating Uncertainty

• Open communication style:
  – a warm, informal style; use phrases like “We are …” and “We believe…”

• Scientific consensus

• Term: range of possibilities, or risk
Who agrees with the scientific consensus?

97 out of 100 climate experts think humans are changing global temperature

http://www.cooldavis.org/about/science-of-climate-change/

Doran et al 2009, Anderegg et al 2010
Climate Scenarios (Physical Drivers)  

Policy Scenarios (Human Drivers)  

Stevenson 2015
What extent of the beach is accessible?

Rockaway Beach Littoral Cell

Present Day
Status Quo
Hold the Line
Laissez-Faire
ReAlign
Neskowin
Hybrid
Strategy #3
Minimize bias

“Objective, science-based information” to help learners make their own decisions
Facts can be interpreted differently and then not trusted

Climate change has always happened; this is not an Ice Age!

Therefore people are not responsible

But this is different from previous natural changes in climate

Carbon dioxide makes up a very small amount of the atmosphere

Therefore it is not worth worrying about

And every little bit counts
Strategies to Reduce Bias

- Provide transparency
- Start with something the audience can agree to
- Think through the underlying problems, potential solutions, and consequences
- Avoid emotional overtones
- Pilot-test & allow public input
- Continued learning

(Oxarart & Monroe 2012 and Welch & Braunworth, 2010)
Communicating Climate Change

• Climate change presents communication challenges to Extension agents and specialists

• It will help to pay attention to:
  – How we frame information so that it is heard
  – How we convey uncertainty
  – How we convey facts and bias

(Powers, Layman and Monroe 2013)
“Win-win” ways that you reduce climate change

• More efficient use of nitrogen fertilizer
• Increasing soil organic matter
• Conservation tillage
• Capturing methane (biogas)
• Biofuels
• Energy efficiency and energy conservation
• Minimizing unnecessary pesticide usage

– Paul Vencelli, UK Ext. 2012
A Proposed Approach

• “Extension should provide climate science information to early adopters and emphasize risk management of specific threats to clients not convinced about climate change, focusing on local solutions and familiar management tools.” – Morris, Megalos, Vuola, Adams, and Monroe (2014)
1959: 316ppm -> 2015: 401ppm (Mauna Loa)
CO2 levels have increased 20% since 1960; rate now >2ppm/yr
And so how's that workin' for you??

Dr. Phil