OPINIONS

The season for directives?

BY SANDY SHAFFER

It seems like every week some piece of mail arrives stating that it's time for one of us to do something: conference registration, dental appointments, or a license renewal. Emails announcing a class that we shouldn't miss, or "no mowing after 10 am!" Even our dog, Maggie, got postcards and an email reminding her she's due for a physical and vaccinations. Good thing she can't read!

And recently our Applegate Fire District staff was directed to begin addressing "the big one"—a massive earthquake in our area. How bad would it hit us? Would the Applegate dam fail? How far would the flooding extend? Could we travel local roads; would our fire stations be functional?

On another note: I just finished reading a Letter of Intent written April 5, 2016, by Thomas L. Tidwell, chief of the US Forest Service (USFS), which outlined a different way of assessing where, when, and how they will respond to wildfires this year. The "Life First" initiative's goal is that "everyone goes home safely every day." Can't argue with that!

Maggie, the author's Akita, is good at taking directives, even when she's due for a checkup at the vet's office.

With climate change and more people living in forested areas, fire seasons are growing longer, hotter, and drier. The chief noted that the USFS will continue to increase hazardous fuels and forest restoration work in order "to reduce the wildland fire threat to communities and to our fire responders."

However, Chief Tidwell wrote that "intense fire behavior may mean we can't protect values at risk under all circumstances." His direction to his people: "*Implement strategies and tactics that commit responders only to operations where and when they can be successful, and under conditions where important values actually at risk are protected with the least exposure necessary while maintaining relationships with the people we serve.*"

While this letter was addressed to all USFS personnel, I think it also takes aim at all wildland fire partners, rural communities, and residents—especially those with homes (values at risk) abutting USFS lands. Talk about a directive!

Even though local fire districts are usually the first on the scene of a wildfire, the Oregon Department of Forestry (ODF) is actually responsible for wildfire protection on both private and Bureau of Land Management lands out here. I asked Dave Larson, ODF's southwest Oregon district forester, whether they follow the USFS views on the "Life First" directive. He told me that the ODF agrees completely with everyone going home safely, and so they strive to "achieve 'Safe and Aggressive' firefighting operations and minimal acres burned." They do this by coordinating with agency partners and private landowners. Makes sense.

So, *my* "on-the-ground" interpretation of these "chief" messages is that if a community or neighborhood *hasn't* been working together to reduce hazardous fuels, then during a wildfire firefighters might go to an area that *has* been making efforts to help protect their homes.

Given this assumption, where do we in the Applegate stand? Where does *your* neighborhood, *your* home stand? Will responders come and help you out? Depends…

Top priority should be access: how does your driveway appear to approaching fire vehicles? Is it wide, vegetation cleared back, with a good surface (and bridge)? If it doesn't look safe for fire crews to travel your driveway, they'll go to the next one! *Yes, really!*

Second top priority is to work to have a defensible space around your home. Yes, that's where the term comes from: will crews be safe defending your house from a wildfire? Fire-resistant building materials, fuel breaks, thinned vegetation, water resources, fine fuels removed from around the structure, safe egress and access*? All of this* helps make a huge difference in whether your home is defendable, whether someone drives up to your house to help, and whether it can survive a wildfire.

And don't forget: over 90 percent of homes that burn do so because of flying embers landing on dry fuels on or near the house. So, keep vigilant with those dead pine needles and madrone leaves that drop during our summer months! *Please*, don't end up helping to increase this statistic.

As for Maggie's directives, I'm glad to say that she was very well-behaved when we took her to get weighed and vaccinated at the vet's office. Whew!

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Science and truth—Part Two: Tools for a skeptic

BY TOM ATZET, PHD

In the last issue, I identified a few widely recognized requisites of science. I also emphasized how even poorly done peer-reviewed science can end up in reputable journals. So, to establish the validity of what you read, it would help to use the following tools to help guide your skepticism.

1. Definition

How do you define hot? There are established measures. Relevant questions can normally be answered without much controversy—regardless of your personal comfort zone—since the question of ambient temperature does not depend on personal bias. Objective, nonjudgmental scales are widely accepted.

Defining beauty, however, is often problematic. Criteria are justifiably judgmental. Disagreements are common and difficult to resolve. Science fundamentally avoids judgment and opinion, focusing on reproducible results, based on precisely defined and measurable objectives.

2. Measurement

Lord Kelvin, the eminent 19th-century Scottish mathematical physicist and engineer, wrote, "When you can measure what you are speaking about and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind." Numbers are very important!

Various body parts were originally used to measure length, but consistency and precision suffered. Thus the forearm, hand and finger, among others, were replaced by rulers and metal tapes, particularly when commerce and taxation required reliability.

In forestry, trees are often described by diameter and height. Their measurement is typically a comparative process using a tool or standard protocol. A diameter tape is potentially more accurate than an Applegate hug even when using calibrated arms. Both measurement error and inappropriate protocol can potentially invalidate results and ensuing conclusions.

3. Population

The term population brings to mind the sum total of all individuals. But science is more often interested in examining a subgroup with more specificity, like a particular species of redwood or a neighborhood in Ruch. Knowing what group was sampled helps the reader assess the validity of inferences and conclusions. For example, sampling a pro basketball team does not necessarily represent the average height of most other humans.

And consider the number of samples. Confidence in conclusions increases as the number of samples increases, to a point. Statistically *one* observation of an event or condition is technically called a case study and carries little weight. But *repeated* samples or observations that deliver consistent results may signal a strong relationship that can be used to predict conditions or behavior. After all, analysis is used to support valid inferences about well-defined populations.

4. Dispersion

Uniformity of body types of Radio City Rockettes is greater than that found in Williams School fifth graders. The difference illustrates dispersion. The Rockettes exhibit consistency in pattern and characteristics; fifth graders illustrate a more dispersed population. Similarly, a mechanically planted cornfield in Provolt is more uniform (requiring fewer samples) than a weed patch in Murphy.

Understanding dispersion of any study, usually expressed in standard deviations, is important. The reader needs to be given full disclosure to appreciate the strength and utility of inferences or conclusions.

5. Disclosure

Purveying science is like selling a home—full disclosure is ethically essential. With science, the reader must fully understand the flaws and merits of the investigation to appropriately apply inferences and avoid misapplication. It's the responsibility of the scientist to fully disclose every step and potential error.

Typically, results are conveyed in the popular media by secondary authors who have less understanding than the original investigators. Additionally, they may lack the qualifications or background needed to fully relate key information. Often only the abstract, summary, or conclusions are published. Disclosure of methodology and analytical protocols may be omitted. Thus, validity of conclusions may not be assessable.

About a quarter of scientific research is deliberately *biased* or slanted to support a position—or just poorly executed.

Once you have found a consistently reliable organization or researcher, it is a good idea to refer to their work or consult them if you have doubts or questions. Many of us use this strategy when dealing with auto repair. Once you find an honest, competent mechanic, you stick with him or her. This strategy works both ways. The research community will drop groups that have agendas to serve or lack the competence or background to deliver valid products.

These five tools can help support your search for the truth—"it is out there." And remember, "Nothing is totally useless. It can always be used as a bad example" (source unknown).

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Dr. Atzet spent 30 years with the US Forest Service as an area ecologist in southern Oregon. He has authored and reviewed numerous articles for peer-reviewed publications and currently serves on the board of the Siskiyou Field Institute.