

STORY BY JIM HEFFELFINGER **PHOTOGRAPHS** BY GEORGE **ANDREJKO**

One ironic consistency in the

world is the constant state of change. Nowhere is this more obvious than in the field of conservation. Wildlife species and their habitats have been changing slowly across millennia, centuries and decades, but the human relationship with nature continues to change very rapidly. With social changes come new challenges for those who are responsible for implementing conservation on the ground.

Early in the field of conservation, we had educated and experienced professionals whose job was to have all the answers and execute good wildlife management to benefit wildlife and citizens. The public seemed content with that arrangement to "let the plumber do the plumbing," so to speak. But as awareness of what Aldo Leopold called a "conservation ethic" grew, the public wanted to be more involved in how natural resources were conserved and managed. A wider diversity of public opinions emerged and greater, more complex demands were made on the trustees in charge of managing wildlife and wild lands for everyone.

As technology changed how people obtain information, the public became much more educated about natural resource issues, and this started to blur that dichotomy between trained biologists and the public. This is not entirely bad, but difficulty arises when the public has easy and quick access to reliable and unreliable knowledge, yet does not have the training to discern between the two.

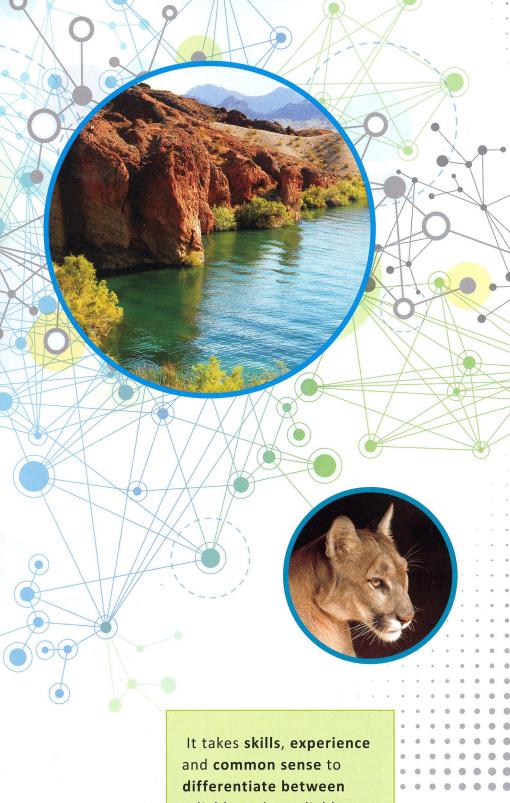
The **Information** Network

Today, we have easy access to a flood of information. The volume and speed with which we are bombarded on a 24-hour cycle make it difficult to filter the important from the unimportant. Information flow used to be more linear like a highway, but it has become very much like a network today as we walk about our day absorbing as much as our senses will allow. Our information network is an interconnected web of newspapers, social media, TV, scientific (and not) news reports, traditional scientific literature and magazines such as this one.

Whether we recognize it or not, we are sipping information from a fire hose. Those in decision-making positions in conservation are faced with the same information overload and must learn how to navigate the flood of information to be successful and make the best decisions. Incorrect or misleading information can cause conservation practitioners to make a wrong turn and end up in a different place than the one they intended to reach.

Pothole vs. Pot of Gold

Reliable and accurate information, along with good planning, is the foundation of solid decisions. To deliver effective conservation programs, professionals need to look far enough down the road to adjust their trajectory to avoid pitfalls and



reliable and unreliable or between accurate and misleading information.

potholes in the road to success. Some information may be "golden" and so valuable it makes a decision easy and relatively uncontroversial. It takes skills, experience and common sense to differentiate between reliable and unreliable or between accurate and misleading information. Navigating any path by guessing on direction at the last minute will surely not get you where you are going. A plan is your map that provides confidence you are headed in the right direction and likely to arrive at your goal.

Disagreement is common among professionals or members of the public who are unhappy with a decision or would like to see a different outcome. Many times, two opposing factions on an issue each claim their argument is supported by the "best available science," and criticize what the other side calls "best." Agencies must navigate through all information presented to find that which is reliable and pertinent to the decision being considered. Usually, a complex decision is an exercise in risk management; that is, deciding which of several options presents the least risk of something very bad happening.

In conservation, and elsewhere, decisions would be relatively easy if we had plentiful, accurate and comprehensive data. In science, the gold standard of accumulating reliable knowledge is the "scientific method." This is the well-established framework in which questions can be tested under controlled conditions to acquire reliable knowledge. However, in the field of conservation, we rarely have the luxury of complete information and frequently must rely on a fragmented understanding of the issue, combined with experience and common sense.

Managing complex ecological systems without all the information you would like is similar to driving down the road in the fog. You know your destination and that you are headed in the right direction, but you have to constantly adjust your management as you near the sideboards of your management guidelines, just as you adjust the steering wheel when you near the sides of the road.

Monitoring and adaptive management are the keys to staying out of the ditch.

Even the scientific literature is not always a reliable source of information. In the plethora of scientific journals with varying quality of peer review, there is a growing amount (maybe even a growing percent) of "bad" information being published. There are several examples of social science researchers submitting completely fictitious papers that were well-received and accepted for publication by a majority of journals they were submitted to.

The Role of the Public as Navigational Aids

Effective professionals welcome the interest and passion of an engaged and informed public. Decision makers today spend a lot of energy providing ways for the public to be a part of decisions by inviting them to contribute both information and personal opinion. "Stakeholder" is a term used in nearly every discussion about conservation decisions today. A stakeholder is anyone who has a stake in the outcome of a decision or action. Since wildlife belong to everyone under the Public Trust Doctrine, we are all stakeholders. Those not engaged in conservation decision making are still stakeholders — they have just chosen to forfeit their ability to influence the outcome.

At times, agencies may be doing what is right for the resource, but the media or vocal members of the public act against them. The tendency for the professional is to revert to the early days of our profession and think all they need to do is "educate" the public. If the public lacks important information, and forms an opinion absent crucial points, then more communication and information flow is important. However, if disagreements are based in differing core values, then additional data and biological information will not resolve the disagreement.

The Conservation **Destination**

In a flood of information with varying degrees of reliability, decision makers in the field of conservation have to be able to identify the most useful knowledge as a foundation for their decisions and actions. Although we always want more information before we act, this can lead to "analysis paralysis," where nothing is done in hopes that more research will make the decision easier. Agencies will always have to act despite uncertainty and under intense scrutiny by a well-intended public. Successful navigation of the information of conservation in today's world requires a serious engagement between agencies and the public to identify common goals. Once a foundation of common goals is built, professionals and stakeholders must then use all reliable information available, consider management experience and apply professional judgment to make the most informed decision possible. 4 Jim Heffelfinger is a game specialist in Arizona Game and Fish's Tucson regional office.