

Sometimes Science Can Only Give Reasons Instead of Solutions

Editor's Note: There are some areas where nature calls the shots. All we can do about it is try to understand, and then get the message out so that others too will understand. The role of science in this case is to find out what is happening, and then to spread the word. The idea that science is the key to control — of everything — is erroneous and can lead to the frustration described in the following article

by Jim Gladson

Oregon Department of Fish and Wildlife

While I was attending a service club luncheon recently, a gentleman asked me a very good question. In a frustrated tone of voice he said, "The ocean salmon season was a mess this year. Now we hear that upland bird populations are way down and that duck and geese numbers will also be low this fall. What has gone wrong and why don't you correct it?"

As I paused a moment to collect my thoughts before responding, I wished to myself that I could give him a snappy, two-minute answer that would send him away with a smile on his face. But that was not possible. The subject was too complex and time to explain was too short.

Even a 20-minute answer would not have completely erased his concern, but I gave it my best shot anyway. I don't think either of us was satisfied when I finished.

What he essentially wanted to know was why can't fish and wildlife populations be consistently high all the time. He seemed to feel that somehow the Department of Fish and Wildlife should be able to correct the ups and downs.

To me his question implied a belief that the Department had some sort of master control. Failure to use this power was somehow a result of incompetence, laziness or outright ill-intent. He had placed his trust and had been let down.

I will give one more try, here, at answering his questions. What has gone wrong and why don't we correct it?

Fish and wildlife managers do not have their hands on any master control. What these managers do have is a set of tools that allows them to work on the machine. Every day scientists learn more about how the machine works. They can even identify some malfunctions and fix them, or at least anticipate them and reduce the impacts on wildlife.

But when the machine that is nature decides to produce cold winters or wet springs, biologists often must stand back then try to pick up the pieces later.

That is essentially what has happened

to upland bird and water fowl populations this past winter and spring. In Oregon, spring populations of some adult upland birds were high but a wet spring caused widespread nesting failures. Hunting seasons had to be cut back or not enough birds would go into this winter to rebuild their numbers.

The big waterfowl populations nest in Canada and Alaska. The story was the same there. Widespread nesting failures reduced the number of birds expected to come south this fall and winter.

Weather is not the whole story on the decline of coho salmon returns in recent years, but climate, winds, and related ocean conditions have been identified as possible contributors to the problem.

Fish habitat in the ocean can change just as bird habitats do on land. We can see snow or ice. We cannot see as easily what goes on beneath the waves.

In some years, poor ocean conditions may have a direct influence on the survival of young coho salmon first entering the ocean.

Specifically, the presence or absence of an ocean condition called upwelling may play a large role in whether those young coho smolts live or die.

Upwelling, which is brought on by a combination of northwest winds and certain weather patterns, pushes cool, nutrient-rich waters from the bottom toward the surface.

The rich waters allow the smolts to feed and grow more rapidly while also tending to reduce the killing of the small fish by predators.

A study going back several years has compared the occurrence of spring upwelling with coho salmon smolt survival and adult returns. The study shows a very close relationship between good upwelling years and higher returns of coho adults the next season. Similar relationships do not appear for chinook salmon or steelhead.

Because coho declines in the last five years have been accompanied by poor ocean upwelling, biologists are becoming more convinced that these ocean conditions are a major factor affecting coho survival.

Like the snows in Eastern Oregon, ocean currents are beyond anyone's control. But rather than serving as a convenient excuse, dealing with environmental disturbances becomes one of the major challenges in fish and wildlife management.

Habitat is the key for survival of any fish or wildlife species. Without a place to live, feed, rest and reproduce, no animal can survive. For upland birds this means

developing and protecting watering sites in the desert, maintenance of areas where cover and nesting space is available, and preservation of needed habitat throughout the state. For waterfowl the story is the same. Marshes and wetlands are developed on Department lands protected on private or other public lands.

These habitat protection and improvement programs do not guarantee that a bird will not freeze or that its nest will not fail, but they do help maintain a strong population that can bounce back from bad years.

For coho salmon, habitat protection and stream improvement is a constant activity for Department workers. Now, with the Salmon Trout Enhancement Program running at a good level, the public is also pitching in to see that spawning beds are protected and that once useless areas are restored to productivity. But the coho crisis also involves research. Why do these fish not survive while chinook salmon populations are doing fine? A recently completed comprehensive coho management program plan calls for improved quality hatchery smolts, extensive studies on the best time to release the fish from hatcheries and continued efforts to save wild populations through stream habitat protection and harvest regulations.

The coho declines are not just an Oregon problem. Similar problems are appearing in Washington, British Columbia and Alaska. The concentrated efforts of fisheries scientists in all those areas are being brought into the fight to turn the situation around.

The tendency to place blame for a serious problem is a natural human reaction. The successive bad coho years, culminating in ocean recreational and commercial seasons this year, has led to a lot of finger pointing.

Some critics have accused the Department of intentional mismanagement. In a recent speech, Department director, John R. Donaldson, called the accusations "Bilge!" He also noted that public hatchery production is materially unchanged from the same levels that produced the coho bonanza in 1976.

Increased production alone is not a cure all since recent adult returns have steadily declined in the face of high production levels.

Like the gentlemen at the luncheon, Department researchers, field biologists and hatchery workers want coho populations to be healthy again, and they are using every tool in the management kit to accomplish that goal.