life isn’t Hollywood. In real life, choices are seldom stark between black and white, good and bad. Visceral responses may work in fiction, but in real life our positions, if thought through, require context and all the information at hand. This was demonstrated recently when our opinion was sought or a position needed to be developed. Washington’s November ballot Initiative 522, for example, on the labeling of genetically engineered foods, elicited questions on how fishermen felt about GMOs; another example has been our industry’s position on renewable energy development, and even on “fracking” for natural gas.

The list goes on, and whether the questions come from other fishermen, the press or the public, a thoughtful and reasoned response is required if we’re to be listened to and taken seriously, even if it can’t be boiled nicely down into a 15-second sound bite.

In past columns here in Fishermen’s News we’ve written at length on issues ranging from aquaculture, to marine protected areas (MPAs), to individual fishing quotas (IFQs) and catch shares, to climate change. (Check your old issues of Fishermen’s News, or go to the PCFFA website at: www.pcffa.org, Fishermen’s News archive.) We have sought to avoid the diatribe or the rant in favor of reasoned arguments. As a result, our positions are mostly nuanced, not black or white.

Here is our thinking on some recent issues:

Genetic Engineering. This issue first raised its head in our fisheries when a Massachusetts-based company, Aquabounty, developed a fast-growing Atlantic salmon by inserting the genes of an ocean pout into a chinook salmon and then sought Food & Drug Administration approval for its sale on the US market (discussed further below). Genetically engineered crops, also called genetically modified organisms or “GMOs,” however, have likely had an effect on aquatic life and some fish stocks for more than a decade.

Genetic engineering, in theory at least, sounds good. After all, what’s the matter with engineering crops so they can, for example, be more drought resistant or be grown in more saline waters? Or, better yet, be more nutritious? Considering the probable impacts from climate change, what’s wrong with developing a salmon that can tolerate higher stream temperatures, or shellfish that can tolerate high levels of ocean acidification?

The gap is between theory and practice. GMO development has largely been turned over to the private sector and dominated by a few large chemical corporations. What we have, as a result, are not crops that are more beneficial to humankind, but those that make the most profits for the corporations selling them.

An estimated 90 percent of the corn and soy now grown in the US is genetically engineered; the percentage of sugar beet acreage that is GMO is about 95 percent. These GMO crops were not engineered to be more nutritious or drought resistant, but to resist glyphosate herbicides, such as Monsanto’s “Roundup.” What this means is higher levels of these chemicals can be applied to the crop without harming the plant. The rub is: these chemicals end up in our waterways where they affect the aquatic ecosystem, either affecting what fish eat or the fish themselves. In September, John Vidal in The Guardian reported, “Nearly 80 percent of GMOs are designed to absorb Roundup. The other 20 percent are designed to produce their own pesticide.”

Questions are beginning to be raised about the safety of glyphosate, even by farmers concerned for their soil. Moreover, there have been no long-term studies of the health effects of GMOs engineered to contain high levels of pesticides. The impacts of GMO production are widespread, whether it is the corn syrup used to manufacture that Big Gulp or the soy in the tofu eaten by a Vegan. Indeed, some salmon farmers are look-
ing at GMO soy products to replace wild-caught fish (e.g., sardine, anchovy) for their fish feed.

Not only have the long-term health effects of additional levels of herbicides/pesticides in GMO crops been largely ignored, so too has the added volume of these chemicals getting into waterways—which can affect everything from juvenile salmon in a stream to crab and flatfish in an estuary. No one is yet even talking about the health and safety of salmon fed with genetically engineered soy or yeast.

A number of scientists have felt it necessary to “circle the wagons” when it comes to genetic engineering, chiding those who raise concerns as being some form of Luddite or Flat-Earther. What they are ignoring, however, is what is happening in the real world with GMOs. In the context of current practices, the fishing community and the public are right in supporting county-wide bans on GMOs and state legislation and ballot initiatives, such as Washington State’s I-522, to require the labeling of GMO foods.

Sustainably Farmed Salmon. In past FN columns we have also discussed examples of sustainable aquaculture operations, such as coastal shellfish mariculture operations that have existed for decades. Sustainable aquaculture operations are relatively rare, however. Two big sources of aquaculture production—salmon and shrimp—are mostly not sustainable. There may now be a few shrimp operations that can be considered “sustainable,” but there are no salmon farms that can be called sustainable, despite the hype from distributors, the Monterey Bay Aquarium’s Seafood Watch card or a Washington Post food writer.

It should be possible to farm salmon sustainably—it’s just not being done. The issues are facilities and feed. Unless the fish are reared in an enclosed pond or tank, with a recirculating water system, salmon farming is inherently a threat to the environment.

First off is the pollution generated by fecal matter, uneaten feed, antibiotics, and chemicals used to control algal growth in the net pens.

Second, open water net pens or operations discharging untreated water into streams, rivers, or estuaries can spread parasites (e.g., sea lice) or disease into the wild.

Third, open water net pen operations are plagued with escapes (e.g., from storms, or marine mammals ripping into net pens, etc.) where there are dangers of cultured fish competing with, preying on, or interbreeding with native stocks. Moreover, salmon farms in the Southern Hemisphere (e.g., Chile, New Zealand), as well as those utilizing Atlantics on the Pacific Coast (e.g., British Columbia, Washington State) cause the introduction of non-native “alien” species whenever escapes occur.

On-shore tank operations for rearing salmon are feasible, but salmon farmers have mostly resisted because the net pens plunked down in public waters are cheaper—provided the escape rates are not too great and the disease potential and environmental damages are ignored.

The second issue against sustainably farming salmon has to do with feed. While much has been done to make salmon one of the most favorable of animals in the rate of conversion of feed-to-fish-flesh (particularly compared to tuna where it can be as high as 20:1), with some claiming a ratio of less than 2:1, the feed source nevertheless remains a problem.

Using wild fish as an aquaculture feed source just doesn’t make sense, if the amount of farmed fish produced is less than the amount of wild fish used in production. This is particularly true when fish such as sardine, anchovy or mackerel—which are already good food sources for humans—are used. But switching from wild fish-based feed to other sources such as genetically engineered soy, is no answer. Even if not genetically engineered, one has to wonder about the efficacy of using crops like soy to feed fish, when these same plants can feed humans directly.

The feed question potentially could be resolved by using some combination of wild fish offal and plant matter, but that probably won’t happen with government and certifiers alike willing to approve wild fish-sourced feed or feed derived from GMOs. Even the Seafood Watch program has run amok, first recommending Verlasso farmed salmon, and now considering adding BC farmed salmon to its “good alternative” category. Thus, until the facility and feed issues together are resolved, there just is no “sustainably-produced farmed salmon,” no matter how aquaculture boosters may spin it.

Renewable Energy. Finally, some comment is needed on measures fishermen should be supporting to mitigate for climate change.

In September, 2013, the Seattle Times ran an extensive Craig Welch three-part series on the devastation ocean acidification could cause the fishing industry. Acidification, along with global warming, is one of the inevitable byproducts of an increase in carbon dioxide in the atmosphere. In late September, the UN’s Intergovernmental Panel on Climate Change (IPCC) released its Fifth Assessment Report (AR5) with even more compelling evidence that the world is warming.

From increasingly severe weather conditions in the Bering Sea to increased acidification in the Pacific Northwest, fishermen are already feeling the impacts of climate change. Curbing greenhouse gas emissions is critical, including the rapid switch to renewable energy sources, such as solar and wind, and development of low-carbon emitting biofuels.

That said, not every proposal for renewable energy is necessarily good. For example, here on the West Coast, with our narrow shelf and limited fishing areas, it doesn’t make much sense to promote wave energy projects or offshore wind when there are ample areas on shore for more than enough renewable energy production. The fishing industry should be pushing for renewable energy development, to be sure, but should not be coerced by the threat of climate change into supporting inappropriately sited projects in our fishing grounds.

Nobody’s Fool. On some issues at hand, some may ask, “why are you fishermen concerned, you’re protected,”
or, “how can you argue with that?” But we live in the real world [how many are there?] where our experience and knowledge must confront the spin, the fiction, and the fantasy of others. Some examples:

AquaBounty’s Proposal to Market Genetically-Engineered Salmon in the US. The biotech company’s application is currently before the Food and Drug Administration (FDA). It calls for fertilizing salmon eggs at a facility in the Maritimes and rearing the fish in Panama; there they would be slaughtered and marketed back in the US. On paper that sounds as if US and even Canadian waters would be protected from “Frankenfish” escaping into the wild.

The reality, however, is that if FDA approves this first genetically-engineered animal for the US market, we anticipate AquaBounty will seek to consolidate operations nearer their markets, such as net pen operations in US or Canadian waters, or begin selling broodstock to other aquaculture operations around the globe. It is not hard to envision a “carbon footprint” argument being made for fish production nearer their main market. If approved, it will thus just be a matter of time before these fish begin escaping into the wild.

Bear in mind, AquaBounty’s salmon are not more nutritious, nor better adapted for climate change; the only benefit is for growers wanting faster growing fish, all with unknown consequences for the environment. This is why the FDA should not approve and why the agency will be sued if it does.

Taste Tests Arranged by Farmed Salmon Promoters. Finally, we have to comment on the Washington Post taste test that got a lot of publicity in September when it ranked frozen farmed salmon the best tasting, followed by two other farmed salmon brands sold as “sustainable.”

Sorry Charlie, but judges consisting of distributors and chefs – not food critics or gourmands – with a vested interest in promoting farmed salmon are not credible. Particularly when the supplier (busted by the Justice Department in 2010 for trafficking in illegal striped bass) of the “Willapa Bay-caught” wild salmon is promoting farmed salmon on its website. In their fantasy world farmed salmon may be better tasting, but that’s not reality.

Conclusion. In a world where the lines between fiction and reality are often blurred, the credibility of our industry relies on contextual and well-reasoned positions and, when necessary, calling out and confronting fantasy and disingenuousness.

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