NAME: _____

Beyond highlighting text

Exercise: The purpose of this activity is to promote your interest in reading and help you comprehend difficult material. The strategies learned from this activity can be applied to other sources of information you read. Read the op-ed and complete the worksheet questions and follow the annotation directions.

1. Pick up a pencil, a pen, or a post-it.
2. Read everything at least twice.
The first time, read quickly to get a sense of what the text is about.
The second and subsequent times read carefully.
Mark anything that you think is:
A. confusing,
B. interesting
C. surprising, or
D. important.
Mark anything that is unfamiliar and keep going.
3. Begin to annotate.
A. Circle, underline, or stick on a post-it for important ideas and explain their significance.

Some examples include:

a. facts that were used in support of the hypothesis and to demonstrate the importance of this study
b. Identifying main idea and supporting details,
c. Defining key vocabulary

4. Write questions where you made annotations. These questions can be for the instructor to answer, for the class to discuss, for you to use in future writing assignments, or for you to keep as a reminder of what you were thinking.
5. Think about the connections between this text and other texts you have read, information from other classes, and personal experiences.
6. **Peer Review** Read your partner's selected text and then respond 10 annotations with what you liked or how can the annotation be improved..

Why the so-called 'Frankenfish' represents the future of seafood

by James Greiff

Well, that was predictable. Almost as soon as the US Food and Drug Administration approved production of genetically modified salmon, the scaremongering about "Frankenfish" and the threats of litigation began.

Some of the groups vowing to file lawsuits to prevent the salmon from ever reaching consumers – the Centre for Food Safety, for example, and the Nova Scotia-based Ecology Action Centre – usually emphasise their devotion to scientific evidence on issues such as climate change. In this case, the evidence, after almost 20 years of study and research, shows that salmon with genes altered to speed growth aren't in any significant way different from wild or standard farm-raised salmon.

Unfortunately, the alarms about GM fish have prompted US food retailers such as Trader Joe's,

Whole Foods, Kroger and Safeway to say they won't sell it, citing objections from customers. Never mind that the shelves of some grocery chains that have made this pledge are already stocked with products containing genetically modified ingredients.

To create the GM salmon, Massachusetts-based AquaBounty Technologies inserted a growth gene from a chinook salmon, the largest type of Pacific salmon, into Atlantic salmon, the main species raised for human consumption. To ensure that the chinook growth gene is permanently switched on rather than just seasonally, AquaBounty inserted another gene from an eel-like fish called the ocean pout.

AquaBounty says this alteration makes its salmon 25 per cent more efficient than standard Atlantic salmon at converting feed into meat.

The two big objections raised by opponents to what the company calls AquAdvantage Salmon is that it will cause health problems for humans such as allergies, or escape and degrade wild salmon populations. The FDA said both concerns were unfounded.

First, because of guidelines adopted a few years ago, the FDA was required to review the salmon as if it were a new animal drug. On that count, the agency concluded that "AquAdvantage Salmon is as safe as food from non-GE Atlantic salmon, and that there is a reasonable certainty of no harm from consumption".

The doubters' response is that the FDA can't be trusted because it's in cahoots with the US food and drug industry.

As for the risk of fish escaping and interbreeding with wild fish or outcompeting them, the genetically engineered salmon won't be raised in floating pens in coastal areas. Farmed salmon can and do escape into the wild from these enclosures, which also can be a source of pollution and disease.

Instead, the GM fish will be raised in two separate land-based systems, one in Panama and one in Prince Edward Island, Canada. The Canadian plant, which will produce eggs and hatchlings, will be indoors, with filters to trap any loose eggs or small fish. While outdoors, the Panama facility, where the fish will be raised to maturity, will have the same safeguards and is located in an area where salmon can't survive in the wild. Furthermore, all the fish will be sterile.

Because the FDA didn't find any difference between genetically altered salmon and other salmon, it doesn't require retailers to label the fish. Instead, the agency is leaving labelling up to individual retailers. If consumers want to avoid the genetically modified salmon, if it makes it to market, the FDA said they can buy fish labelled as caught in the wild.

Better still, as Tamar Haspel, writing in The Washington Post, put it, if AquaBounty is so certain of the merits of its fish, it should have no qualms about labelling: "[P]ut a label on it. One of the reasons GMOs became such a brouhaha is that consumers feel the technology was foisted, in secret, on an unsuspecting public."

One thing that has been overlooked in all this: just how important aquaculture is and will be as the oceans are more heavily overfished amid population growth, advancing fishing technology, and rising incomes and demand. The World Bank estimates that as much as two-thirds of the seafood people consume will be raised on farms by 2030. And what do fish in farm pens eat? A lot of sardines, herring and other so-called forage fish, which are at risk of being overharvested.

Aquaculture will inevitably mean finding fish to farm that are more efficient at turning food into

meat. Researchers are already looking at ways to genetically modify other types of fish, such as trout and tilapia, to grow faster and more efficiently. AquaBounty's salmon may not be to everyone's liking. No one has to eat it. But it probably represents the future of seafood.

Annotation Peer Review Guide

Read your partner's selected text and annotations carefully. Then respond to the prompts below.

	I like this annotation because…	This annotation could be improved by…
Annotation 1:		
Annotation 2:		
Annotation 3:		
Annotation 4:		
Annotation 5:		
Annotation 6:		
Annotation 7:		
Annotation 8:		
Annotation 9:		
Annotation 10:		