

Response to question re: Conflict of Interest Case with Kim Patten

Wednesday, October 04, 2017

1. What is your official relationship with the commercial shellfish industry?

My official relationship is the same as any of my other clientele. This would include the commercial cranberry industry, the timber industry, the cattle industry, Willapa National Wildlife Refuge, The Nature Conservancy, Washington State Dept. Fish and Wildlife, the County Commissioners, Pacific County Economic Development Council, and the citizens of SW Washington. I work with them to help solve problems and issues that they face, provide outreach services, and conduct applied research. This is all part of my job description. I consider the shellfish industry a very important clientele, in that are the major employer and economic engine for our region. In addition, I have been officially assigned to work on these shellfish pest issues by deans and directors at WSU. I also represent WSU as their representative on the USDA's Western Regional Aquaculture Committee. Basically, I work with the industry at part of my official role with WSU.

2. Do you have that same relationship with other agriculture industries in the Long Beach area, i.e., the cranberry industry?

Yes, exactly the same. However, the cranberry industry has and continues to provide the office, lab, water, septic, power and the research farm to WSU without cost. This has been ongoing since 1993 when the university sold them the farm, contingent on them providing those services. The shellfish industry rents an office space at WSU Long Beach from the cranberry industry. Currently that space is unoccupied, but they have housed their employees there on/off for the past several years.

3. Is it a part of your official duties to assist the commercial shellfish industry to increase production and/or are your official duties to ensure that the environment is protected? How do you balance the two?

Basically my job is to enhance environmental and economical sustainability of the natural resource industries in SW Washington. These two objectives are not at odds.

See attached official position description (below is the section that is germane).

➤ **Programmatic Responsibilities (80%)**

Location of work – The office location for this position is the Cranberry Research Station at Long Beach, Washington. The primary geographic region served by the position is coastal Pacific and Grays Harbor Counties with attention to other areas of the district and state as synergistically beneficial to the Extension cause and in line with applicable subject matter expertise of this position. The primary scope of work for the position includes research and education relevant to all aspects of cranberry production including related issues of water quality and invasive species. In addition, this position

works in collaboration with other local agricultural and shellfish producers and natural resources managers to address issues of local relevance.

Target audiences for the position include cranberry and oyster growers along with related state and federal agricultural and natural resources managers and their related agencies.

Also see WSU Extension Goals below and the percentage of my FTE allotted to each (from job description).

**WSU Extension Strategic Goals addressed by this position.**

❖ **Enhance Natural Resources and Environmental Stewardship - 30% FTE**

- 3.1 Improved economy and quality of life.
- 3.2 Resolve natural resource conflicts.
- 3.3 Improve ecosystem management.
- 3.4 Solve complex issues of water and fisheries management.
- 3.5 Control spread of non-native invasive species.

❖ **Enhance Economic Opportunities for Agricultural Enterprises while Protecting Washington's Resources - 70% FTE**

- 4.1 Increase profitability and competitiveness of agriculture and food enterprises.
- 4.2 Reduce market risk to agricultural producers.
- 4.3 Increase application of alternative agricultural systems.
- 4.4 Increase application of integrated pest management and conservation strategies.

Below are two example of some recent publications to demonstrate that my work is not at odds with the environment. Both of these projects were related to the work I was doing with shellfish.

Moser M, Patten K, Feist B, Lindle S. In press. The importance of estuarine habitat to threatened green sturgeon (*Acipenser medirostris*). *Journal of Experimental Marine Biology and Ecology*.

Patten K, O'Casey C. 2007. Shorebird and waterfowl usage of Willapa Bay, Washington in response to invasive *Spartina* control efforts. *Journal of Field Ornithology*. 78. 395-400.

4. Explain your personal relationship with the shellfish industry?

I've worked with them for 27 years on pest management-related issues. Initially it was with *Spartina* control. Starting in the late 1990s I started to conduct research on other issues affecting their livelihood. This included invasive eelgrass and burrowing shrimp.

I attend some of their local, state and regional grower meetings. This is normally to give a talk or obtain stakeholder feedback (as required by my job description). This is similar to what I do in the cranberry industry. I have good friends in the industry, but no different than what I have in

the cranberry industry or any of my other clientele groups. It is a small community and we all know each other.

5. Do you believe your personal relationship with the shellfish industry is in conflict with your job duties to protect the environment? Explain.

No. In fact the opposite is true. My work with the shellfish industry resulted in the elimination of the most serious threat that the ecology of Willapa Bay ever faced – invasive *Spartina*. This was work done with the shellfish industry, The Nature Conservancy (TNC), the National Wildlife Refuge, EPA, NOAA, The Army Corps of Engineers, WDFW and WDNR. My work was key to its success. Without my effort, the shellfish industry and all the shorebird habitat in Willapa Bay would have ceased to exist. It has been the largest, most successful restoration of shorebird habitat in the United States. I have been recognized and honored for this environmental contribution at the state, region and national level. This win-win approach is the model on which I base the rest of my work.

Everything I do with the shellfish industry is also highly regulated by EPA and Department of Ecology. I obtain all the permits required and work closely with these agencies to make sure that any of the programs that I develop have minimal impact to the environment. I work to collect information to help the agencies obtain the permits. I have often been funded by these agencies for that work. Because some of the methods I have worked with and developed involve pesticides, it is often perceived that they are incompatible with environmental protection. For that reason, most of the very work I am involved in is to assess and report the impact of those pesticides, irrespective of results, good, bad or neutral. These results have been used to develop the permits and SEIS for many situations.

My work is no different than thousands of other Extension professionals in the US who work on crop protection. We conduct applied research to develop tools to be used by the agriculture and aquaculture industries. The only exception is that I do much of my work in an estuary, which gets extra scrutiny by environmental groups.

6. In 2012 you conducted research into the use of Imazamox to control Japanese Eelgrass, (Research plan for estuary use of imazamox in 2012\*).

\*Correction to this statement – I've had ongoing research on this from 2007 to 2017, not just 2012.

- a. Who funded this research?

Wash Dept. of Fish and Wildlife funded that research.

- b. Were you paid by WSU (time/resources) to participate in the research?

No, my position is not grant funded. I am a salaried professor at WSU. I am state-funded and that funding is administrated by WSU. No direct or indirect funds went to my salary from this project. I am required to provide an 'effort certification' form to WSU on all funded projects.

They state what percentage of my efforts goes with each project. Those records are maintained at WSU, but most projects are only list as 1 to 2% of my time.

c. How were the four test sites selected?

I am not entirely sure which four sites you are referring to. Over the ten+ years of my work on imazamox there have been many dozens of sites. Below are titles of papers I've published that detail those sites and why they were chosen. I've attached those few papers.

Patten K. 2015. Imazamox control of invasive Japanese eelgrass: efficacy and nontarget impacts. *Journal of Aquatic Plant Management* 53:185-189.

Patten K. 2014. The impacts of nonnative Japanese eelgrass (*Zostera japonica*) on commercial shellfish production in Willapa Bay, WA. *Agricultural Sciences*. Published Online. SciRes.<http://www.scirp.org/journal/as>. <http://dx.doi.org/10.4236/as.2014>.

Ruesink J, Freshley N, Herrold S, Trimble A, Patten K. 2014. Influence of substrate type on non-native clam recruitment in Willapa Bay, Washington, USA. *Journal of Experimental Marine Biology and Ecology*. 459 (2014): 23–30.

Basically, the criteria for site selection depended on the objective.

If I wanted to assess control then I used easy to access sites that had good densities of *japonica* all along the LB peninsula. These were small plots with no shellfish on them.

If I wanted to assess environmental/ecological impacts then I needed large sites that could be treated and monitored without other activities going on in those sites. For these I used small portions (0.5 to 5 ac) of a 1000 acre tract owned by Taylor Shellfish between Oysterville and Nahcotta. These were also used to assess off-site movement of imazamox and treatment effects on megafauna (birds and fish) and infauna (benthic invertebrates). Those plots had no shellfish on them at the time of the experiments. These ecological impact assessments have been done over the past ten- year time frame (2007 to 2017), and are just now finishing.

If I needed to assess the impact on clam production then I used commercial clam farms that were infested with *japonica*. Mine was one of those. Bear in mind that during this part of the research I was limited to 1 acre per year. So if I had four sites to assess impacts to clams, and four or five sites to assess efficacy, then any given site might have only had 500 to 1000 ft<sup>2</sup> treated with imazamox. This would have been done in small replicated plots, (8 treated and 8 untreated plots, each plot~ 100 to 120 ft<sup>2</sup>). The size, shape, and number of replications depended on the year.

To qualify for sites to assess impact on clam production, I needed the site to have the following features: 1) easy access by walk from shore, 2) a decent density of young and mature clams, 3) the site was not going to be commercially dug within 2 years, 4) agreeable grower, 5) the site would not have other things done to it (gravelling, harrowing, any other eelgrass control), and 6) the site would not get fouled by macroalgae that could kill the clams. I had very limited choice in

sites that met all these criteria. I think I had about 7 total sites when I started this work, but only ended with 5 valid sites, as their clams died off due to macro-algae fouling on two of them.

One critical aspect of field research is to have as many replicated sites as possible. This is the gold standard. You can not make any inference on production from one site. You need to have multiple sites that represent different habitats. With that in mind, sites need to be spread out over the bay. I normal expect one or two sites to be lost with this type of work. My site was the most southern site in this particular study.

d. Did the four sites benefit from this research, did they become more productive?

You can read my research for the details. Some were more productive, others less so. But again, this is only within the small treated areas, not the entire site. As mentioned I could only treat 1 total acre in the bay. I used less than half of this amount on this particular study. So due to this limited area per site, the actual benefit to any shellfish grower was almost non-existent. Futhermore, any gain that was on the site as a result of the treatment was lost to them during our harvesting of the plots. We dug and processed the clams from the treated site and untreated sites. We measured and weighed (fresh and dry weight) the samples of the plots. This process is destructive. There was nothing left but dried clam meat. In fact, growers could actually lose productivity from my research plots. It is actually difficult to convince growers to let me use their sites as part of research plots for that very reason. In cranberries I get Ocean Spray to compensate growers for the research I do on their beds that results in crop loss. Compensation for crop loss is not an option for shellfish growers.

e. What would you estimate the cost of this research per site?

Again, it depends on which research project and which year and which sites. To put out one experiment at one site and only look at clam production would cost between \$500 and \$5,000. The cost depends on how many years you collect data. The treatment part is cheap, \$250/site. But it costs ~ \$250 to \$5000/site to harvest and process the data. These are never done in isolation, so it is impossible to be exact on the cost per site. Also the cost is dependent on the clam density and number of replications per site. If there are a lot of clams to harvest per plot and a lot of replications, it costs more. Each clam has to be weighed and measured; this is the costly part. If I have only eight replications and the yield is very low, it could be done for under \$500 to \$1000.

If we are doing any experiments that involve chemical analysis of imazamox in water or sediment then the cost goes up very fast. It runs about \$300/sample to collect and analyze imazamox. If I am doing any detailed assessment of ecological impacts then the cost also go a lot. For example we just finish looking at how imazamox treatments affect shorebird foraging. It required over 35 visits to the site. Finally, the cost are contingent on the granting agencies and if they pay indirect cost. That cost is 28% added on to the cost of the project.

If you have a specific project you want a cost for then I can provide an estimated, but I need more details.

7. Were there other years in which research was done regarding the use of Imazamox to control Japanese Eelgrass in which you used your personal property to participate in the research? If so please provide that information.

Over the past 27 years, I have used my property to conduct many different research projects. This was done mainly for convenience. Here is a list of projects that have been done on my property.

- a) I conducted research on *Spartina* control in the salt marsh from 1991 to 2008.
- b) I conducted research on eelgrass control from 1993 to 2007. This work was on efficacy before it was a clam farm (just bare sand, and new *japonica* starting to spread on to it). I had a few small plots scattered on the site.
- c) The site was used to study the interaction between *japonica* and *Spartina*. This was an ecology study by a graduate student from UC Davis.
- d) The site was used in cooperation with a Western Washington University project to look at erosion rate post-*Spartina* control (mid 2000's).
- e) I used the site as part of a project to assess shorebird/waterfowl use of treated and untreated sites (mine was within a large network of treated sites). This was a monitoring experiment where I just included my site as part of the larger site. I treated my ground using my own time and money (not part of WSU) to remove all the *japonica* from the clam farm (as allowed per permit). We just used the site to monitor shorebirds.
- f) I used the site between 2010 to 2012 on a project to assess the impact of *japonica* on clams. The site was one of 5 sites we used to study the effect of *japonica* on yield that year. At this site I had 8 replications of 3 by 4 m plots, ~ 960 ft<sup>2</sup> treated.
- h) The site was used by a marine ecologist at UW to study the interaction between *japonica* and *marina* eelgrass.
- i) I've also used my garden to conduct field research for the USDA. In this site I evaluated crosses for a new type of berry for their suitability to a coastal climate.

In summary, it has been commonplace for me to do work on my property. None of these provide any economic gain. It is just a matter of convenience, saving time and money to do the work off-site. Most of the work on the tideflats has to be done in the very early morning during low tide. To work off-site requires a 30+ minute drive and a 30 to 60 minute walk. This can be a pain when low tides are at 5 to 6 am. Whenever possible, I find it much more practical to walk out my door to do the work. However, if I include all the experiments I have done in the bay over the past 27 years, I would say that much less than 1/10 of 1% were done on my own property.

8. Have you used other state resources, emails, time to support the use of Imazamox to control Japanese Eelgrass on your personal property, i.e., sending emails to the Department of Ecology from your WSU email account to support the use of Imazamox to control Japanese Eelgrass?

I use my work computer/ email to send emails to EPA/DOE/WSDA/WDFW and other state and federal agencies for all sorts of permits and efforts. This has included permits that would support many different types of large state-regulated efforts that affect industries and the areas that I work in. For example, I have done so regarding *Spartina* control, aquatic weed control, aquatic herbicide permits, control of burrowing shrimp with imidacloprid, control of cranberry insects and diseases with numerous pesticides, coastal erosion issues, many EIS's, NPDES's, Shoreline Master Plans, wetland regulations, endangered species, noxious weed listings and control, Special Local Needs for Pesticide uses (SLN) and Section 18s, and hearings by state agencies. If I have expertise in an area, and there is a public hearing on a subject that affects the industries that I work with, then I think it is a good investment of my time to provide comments. This week, for example, I provided public comment on surfactants in 'The Washington State Department of Ecology (Ecology) Draft Supplemental Environmental Impact Statement (EIS) for Aquatic Plant Management'. Why did I provide comment? Because I have 20 years of experience in this field, and am considered an expert, and I think their EIS missed an important aspect of surfactants that could impact the environment. I consider it part of my job to work with agencies. I am often called to testify in front of agencies' hearings or expert panels. For *japonica* I was asked to be part of several expert panels and white papers for Ecology, and to testify in defense of the NPDES for Ecology in front of the Shoreline Hearing Board. So yes, I do use my WSU email for the purpose of providing my expert opinion, especially when I am one of the foremost authorities in the world on a subject. In this case, it happened to be the use of the herbicide imazamox to control Japanese eelgrass.

9. What is your official relationship with Brian Sheldon?

Brian and I have served on many different county and local committees over the years. Brian and I have worked on projects together related to burrowing shrimp control. Brian and I are often co-hosts of many different tour groups on the bay (college classes, state and federal agencies, etc.).

Brian and I have a contract for the harvesting of clams on my property. He sends in his crew every four to seven years to dig clams on my ground and I get paid \$0.65 or 0.70/lb for them. He has this same contract with many other land owners that have small commercial clam grounds. He has only harvested once on my ground. The next harvest will be in three or four years.

10. How do you know him?

Brian and his family are all my friends. I've worked with his wife on the school board for 8 years. I've worked with his dad on *Spartina* for 27 years. He is active in the local community and so am I. As I mentioned we are on many of the same community boards together. He has kids in same school that I did, and he often talks about school-related issues with me.

11. In November 2012 did you enter into a personal business transaction with Mr. Sheldon?  
Explain.

See above. I am not sure the exact time period we signed the contract, but it was around that time. He harvested clams in 2014. This was my first commercial harvest. The site is high ground and not very productive. Normally a good site can be harvested every 4 years. I received a little over \$4,000 for the clams he harvested.

12. Does Mr. Sheldon have a private interest in your research on the use of Imazamox to control Japanese Eelgrass?

1. I am not sure what you mean by this question. Does he gain financially from my research? Yes, but he is no different than any other clam grower in Willapa Bay. He also has a private interest in my work on *Spartina* and burrowing shrimp control, just as does every other shellfish grower in Willapa Bay. Did he support my research with money? No. Did he elicit this research effort? No. Did he even know I was doing this research work? No, not until the later years when it was well underway. Did he gain anything from me putting out plots on his property? No. We did have one set of plots at one of his sites, but that site was a failure and had no clams. Did he treat his property with imazamox, once there was a NPDES and thereby have improved clam yield? Yes he did, as did other growers. The whole purpose of this research on the use of imazamox to control Japanese Eelgrass was to find methods to improve manila clam production in Willapa Bay. This is basically the third leg of WSU's land grant university mission statement "To apply knowledge through local and global engagement that will improve quality of life and enhance the economy of the state, nation, and world". I've been told by growers that overall this project has increased their production significantly and add several millions of dollars to the local economy.

I view this in a similar way to how my friends who are cranberry farms benefit from my work on insecticides to control a major cranberry insect pest. Eventually my work results in a registration of a product that my friends use to control insects on their farm. My friends benefit, but so does the entire industry. I don't work on this project because they are a problem on my friends' farms, Brian Sheldon's farm or anyone else's farm. I work on these problems because they are major priorities to the respective industries. You can assess for yourself the industry's needs and priorities - see 'Pest Management Strategic Plan Bivalves Oregon and Washington' <https://ipmdata.ipmcenters.org/documents/pmpsps/OR-WAbivalvePMSP.pdf>.

13. Have you ever testified in court of law regarding the use of Imazamox to control Japanese Eelgrass? If so, was that as an employee of WSU or some other interest? Please explain.

Yes, the State Attorney General requested that I testify at the State Pollution Control Hearings Board in defense of Dept. of Ecology for their NPDES permit. The Attorney General representing Ecology worked with the Attorney General representing WSU to assure that my testimony/ expert witness was appropriate. I believe I was subpoenaed to provide this testimony,



but can't recall the details. I think that AG has moved on, but the contact was Gordon Karg, AAG, Washington State Attorney General's Office, Ecology Division. Why was I called to testify in this regard? It was my data that was used to develop the permit for Ecology, and I was the foremost expert in the area.

14. Did you receive compensation, in any form, for your testimony from anyone in the commercial shell fish industry?

No compensation was received. However, we did have working dinners and lunches with the AG during the hearing, and I don't recall paying for those meals. Someone paid for those them. It could have been the AG office, Ecology, or the shellfish industry; I am not sure.

In fact the testimony actually cost me time and money. I lost three days of office work, plus the cost of travel, lodging and other meals. I paid for those costs out of my extension travel budget that I get from WSU. The time was just lost work time. I had to compensate for this by working longer on other days to get my projects done.