8/16/2022

Chelsea Morris
Washington State Department of Ecology
PO Box 47696
Olympia, WA 98504

Submitted via Online Comments Form

RE: Public Comment Period for the Draft CAFO Permits / Flood Plains

Dear Ms. Morris:

I submit these comments in response to the Washington Sate Department of Ecology's call for comments on the draft Concentrated Animal Feeding Operation National Pollution Discharge Elimination System and State Waste Discharge General Permits. A review of past data from the ERTs system and reported information included below will reflect that the drafts do not address both unique requirements posed by manure applications in flood plains and both ECY and WSDA have difficulty (unable) controlling CAFO originated manure applications.

This document should not be viewed as general complaint against agriculture, ECY, and WSDA pointing out shortcomings, but an illustration of the complexity of manure applications in flood plains and the consequences they have to the environment with marginal at best benefit to any crops or pasture. Other states have faced the same issues and realized these complexities can be best managed by eliminating any risk of applications during the season rivers can flood. It is time for Washington state to join the ranks of the other states with the same conclusion and regulate accordingly.

ECY and WSDA's failure to control CAFO originated manure applications causes significant damage to natural resources in Washington state including salmon and other fish populations, as well as pushing Southern Resident Orcas towards extinction as described by our Governor. There is also a great human cost in this damage, perhaps shouldered the most by native cultures causing irreparable harm to their cultures by not being able to practice customs and cultures agreed to by treaties with the United States Government. This current ECY and WSDA modus operandi promulgated by this draft must change to initiate improved water quality and resulting benefits to all that live within the state of Washington.

As a starting comment, there is no rationale for the two permit system. The two permits should be combined into one permit to prevent confusion and duplication of efforts in updating and similar activities / sections.

Comments pertain to both draft permits as applicable.

The comments will address the following CAFO issues and provide some already successfully implemented solutions used outside of Washington state:

- The unaddressed flood plain shortcomings with documented examples
- Manure exports and need for "Cradle to Grave" RCRA style responsibilities

- Biased representation in the Water Quality Board in favor of agriculture
- Material / Nutrient Mass Balance Plan to verify agronomically compliant manure disposal resources availability
- Fines and penalties for permit non compliance and violations
- Other issues and thoughts

THE UNADDRESSED FLOOD PLAIN CONDITIONS

Specifically, the draft General Permit in section S4.K.3 “Land Application” starting on page is silent on flood plain manure pollution in the “Application Restrictions” section. This and a few other issues must be addressed.

Starting with S.4.3 on page 31 of the combined permit draft:

3.a – The crust requirement should be removed, if there is a 2” frozen crust, the soil is already below 32F.

3.b – Needs to be changed to “Snow covered or traces of snow”. If the snow is present, soil must be at 32F or near freezing in some locations where patches exist and the other soil is likely frozen as well or near the freezing point where crop benefits are negligible. Plants do not grow well inside the freezer or refrigerator, no need to fertilize them either.

3.d – Needs to be changed to contain a descriptive acceptable method(s) or recommendations of determining water table from the surface in application areas, such as seasonal surface ponds and monitoring pits / trenches and located on maps. If manure is applied, the conditions of these ponds and pits need to be documented as permanent records by pictures from cell phones or pocket cameras with a date and time stamp from the camera. Another solution would be an array of piezometers, preferably wireless to track and log groundwater height as the preferred method. The inspector could then match levels to applications to assure compliance.

3.f – As read indicates manure must not be spread after October 1st except as noted in 3.g and S.K.4

There are several shortcomings at work here in 3.f and noted exceptions which will cause non point pollution which by USDA best management practices and other states are non preferred alternatives, not best management practices, or simply not allowed due to the potential for non point pollution. In plain language, this allows CAFOs manure application convenience at the expense of the environment, particularly in flood plains.

The T-SUM200 start date is January 1st of each year and is found by averaging the daily maximum and minimum temperatures until the sum of the averages in degrees C equals 200. When this 200 number is met, manure may be applied, regardless of location, including a flood plain during the active flooding season.

As a simple historical example of the failure of this approach in flood plains, we may look at the Stillaguamish in Silvana Washington. This area frequently floods, has frequent winter manure

applications by a CAFO and others, and a frequent source of non point manure pollution which can be easily avoided as shown by regulations and best management practices in other states without undue burden to agriculture.

A search of public weather history for Silvana WA will show that for January the yearly average high is 47F (8.3C) and yearly low is 36F (2.2C). The average daily T-SUM for January is (8.3+2.2) / 2 = 5.5C

To find the number of days until application after January 1st using the 200 T-SUM value, we have:

200/5.5 = 36 days.

Thus, according to S.K.3.f if other conditions are met, manure may be applied.

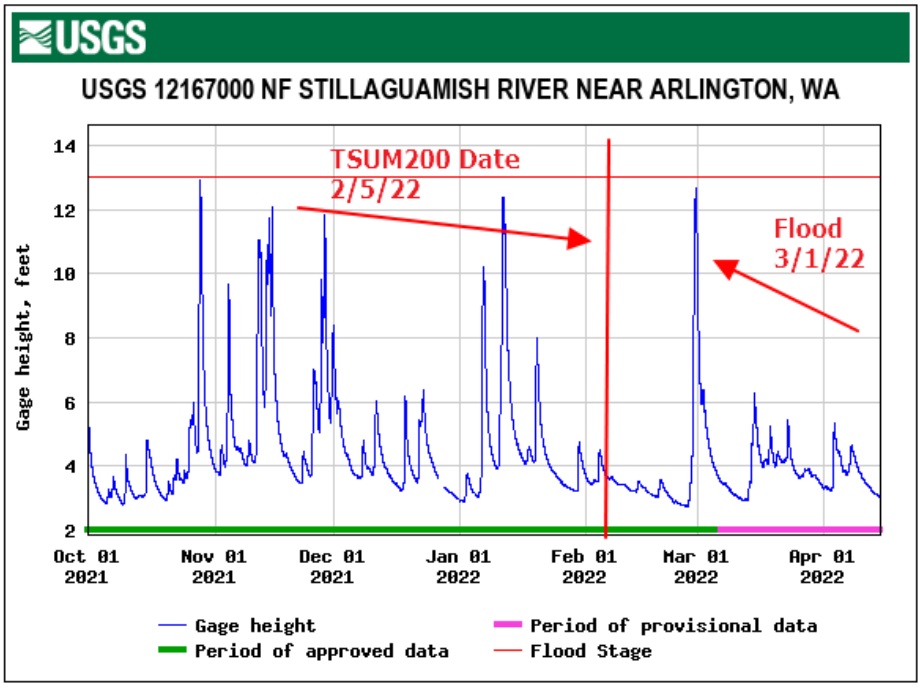
The historical flooding data from the USGS and NOAA for March 1st 2022 provides information about this. It is available at:

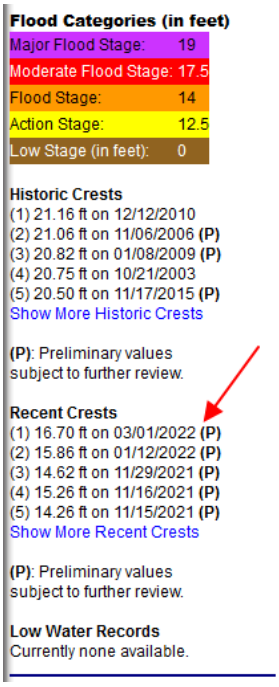
https://nwis.waterdata.usgs.gov/nwis/uv/?ts_id=151322&format=img_default&site_no=12167000&set_arithscale_y=on&begin_date=20211001&end_date=20220415

https://water.weather.gov/ahps2/hydrograph.php?wfo=sew&gage=arlw1

On the Stillguamish, using this years flooding data flooding has occurred as late as March 1st where the river was in flood stage at 16.7 feet, 4 feet above the action stage per NOAA.

This date is approximately 3 weeks past the proposed TSUM200 date of 2/5/22. The USGS plot below shows this shortcoming graphically.





See Text For Description and Explanation

What the current draft allows is manure applications that will unnecessarily create non point pollution in flood plains when the benefit to the cropping is marginal and the flooding non point pollution issues are significant in rivers. This is the historical approach which has partially caused poor water quality leading the Puget Sound rivers to have less than 5% of the salmon populations from historical levels and 70% of the Puget Sound salmon species at risk per the Governor's recent brief on salmon recovery. The sources of these statistics are at the end of these comments.

Below, clearly documented examples of the current approach and that suggested in section S.K.3.f are below showing the fallacy of this approach. CAFO "exported" manure is shown after being flooded by the Stillaguamish on 3/1/22. This picture is the next day after the water receded. The guard rail with debris indicated the water was at least 2 feet higher.

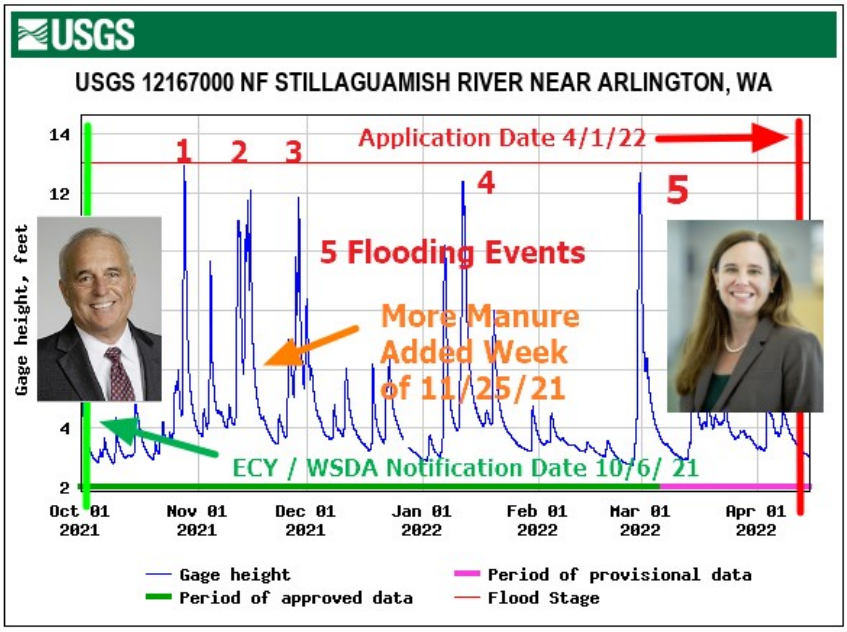
It is important to note that this condition was reported on 10/6/21 through the ERTs database, yet the manure was not spread until 4/1/22. More manure was added the week of 11/25/21 indicating an untimely addressing of this report by ECY / WSDA.

This manure was flooded several times, at least 5 events by the Stillaguamish during the winter flood season. Thus, though reported in the end of the dry season the ECY and WSDA are unable to rectify a clear looming non point CAFO originated pollution problem in a timely manner making the agencies partially responsible for the non point pollution themselves.

See Text For Description and Explanation

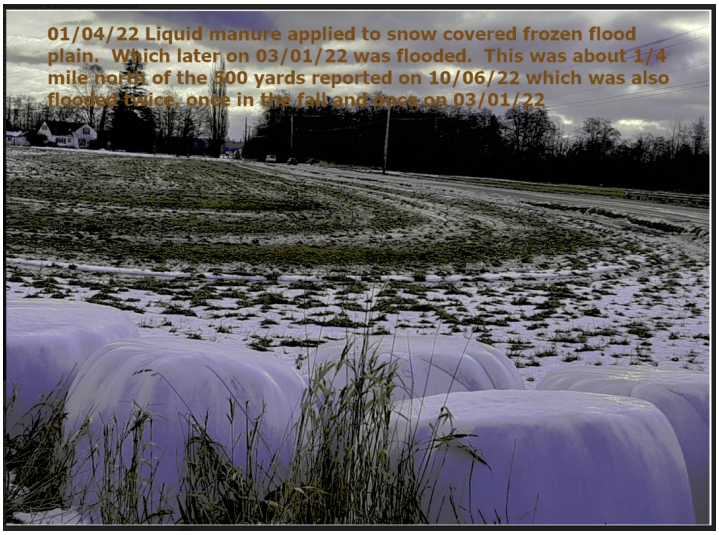
The following plot indicates the notification date to ECY (green) and WSDA and the application date (red). The gage height indicates the stored manure was inundated at least 5 times needlessly. There was a one month missed opportunity for the ECY and WSDA to take action. As a result the manure caused non point pollution needlessly.

No removal, no protective berms, no mitigating activities suggested or implemented. 6 months of nothing.



See Text For Description and Explanation

Likewise, the questionable application on snow covered frozen ground had marginal positive effects on the cropping while having significant effects on water quality when the location was flooded and contained water for several weeks with the high groundwater table from the flooding. This location is approximately 1000' to the north of the manure piles previously discussed which is just on the other side of the house shown in the picture.

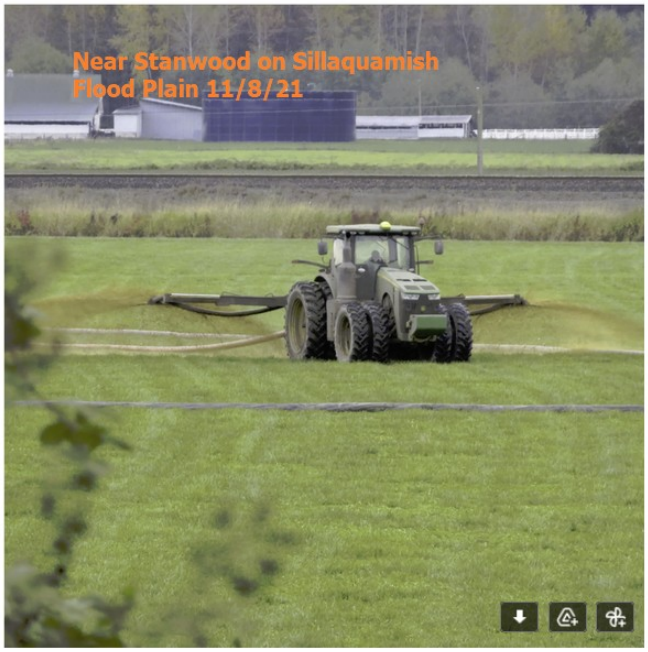


See Text For Description and Explanation

Using the graph above with the gage height this 1/4/22 application on frozen snow covered ground was likely flooded a few days later and was without a doubt a week later as indicated by the trapped water covering a few acres for several weeks.

Here we have another example of flood plain manure applied 11/8/21 with the explanation by the ECY Nonpoint Water Quality Specialist on 11/17/21.

"In regard to the your report on 11/8 about the manure application on Pioneer Highway near Stanwood, WSDA has contacted the dairy that applied the manure. The manure was applied in order to free up storage in the dairy's manure lagoon. According to the WSDA dairy inspector, the application "was low risk and a better option than having the manure lagoons overflow due to heavy rains"

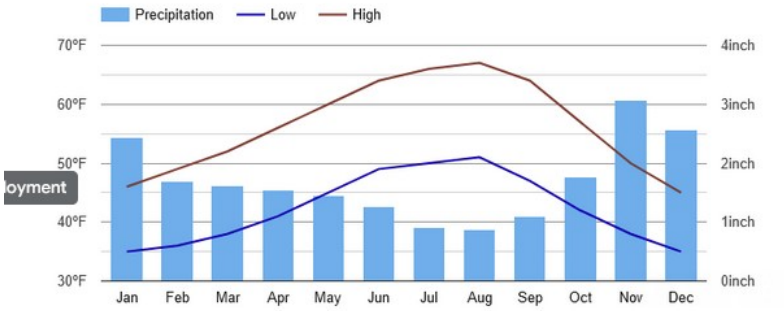


See Text For Description and Explanation

A historical and statistical review of the rains will find that the rain was not unexpected nor unusual in nature and the applications was required simply due to poor lagoon management.

Of course there are heavy rains in November, it is the highest rain month of the year. Yet this predictable return of the rains always appears to be some new phenomena after the dry summers causing both panic and confusion resulting in applications as shown above.

Av. precipitation in inch	0.91	0.87	1.10	1.77	3.07	2.56



See Text For Description and Explanation

Interestingly enough the response from Mr. Kyrre on 3/17/22 was:

- ERTS #710513, liquid manure application on Pioneer Hwy, received 11/30/2021: This manure application was under control of Stangeland Farm 2 (Dairy). WSDA conducted an investigation found no violation on 11/11/2021. This investigation is closed.

This application described above is the Part 5 page 32, the "carte blanche" clause at work which needs to be eliminated in the drafts.

The hard and fast date of October 1st has been selected to cease manure applications by ECY and WSDA. Likewise a specific date must be selected for the Spring as a time when applications are allowed again, without exception or reason. Vermont has chosen April 14th for the date.

Thus, it has been shown manure is exported, stored and applied in flood plains in active flooding seasons to the detriment of water quality.

The T-SUM200 method proposed falls short and is of no use ensuring safe application of manure during the winter in flood plains due to consistent flooding well past the average T-SUM200 date by approximately 23 days (2/5 - 3/1).

It has also been shown that weather predictions appear to be unsuitable for manure applications in flood plains as well as evidenced by the storage and application of manure as shown on frozen ground with floods a few days and approximately a week later. Further research using the ERTS database will indicate similar problems for many years in the Stillaguamish basin alone.

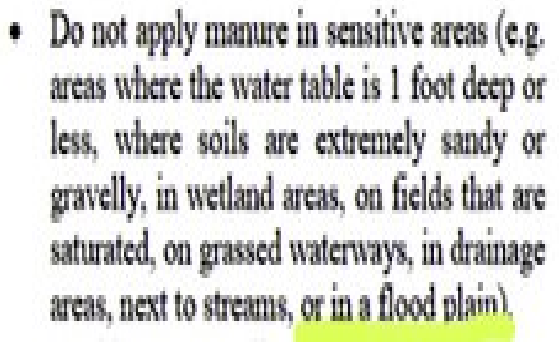
Sadly it has also been shown by reporting dates that the ECY and WSDA are ineffective in preventing non point pollution as regulators, and unable to act in a timely manner to control and mitigate CAFO originated manure in a flood plain even when reported in a timely manner to prevent the non point pollution, 5 floods and 6 months later. It has also been shown that operators need to manage lagoons actively and not rely on a Part 5 page 32, "carte blanche" clause to do as they please without penalty at the expense of the environment.

Continuing on…

Part 4 “Double Cropping, Winter Crops, Perennial Crops” on page 32 is unsatisfactory in flood plains during the winter season for the same reasons listed above and needs to be specifically excluded in flood plains.

As mentioned above, Part 5 page 32, there are no reasons, other than to provide “carte blanche” flexibility in manure applications that manure equal to the full CAFO nutrient budget in a flood plain to create non point manure caused pollution by flooding events. Section 5 needs to be specifically eliminated for CAFOs in flood plains under all or any conditions, and likely should be for all agricultural manure operation operations, CAFO or not.

The above changes are quite reasonable, available, and mirror best management practices. From the USDA we have:



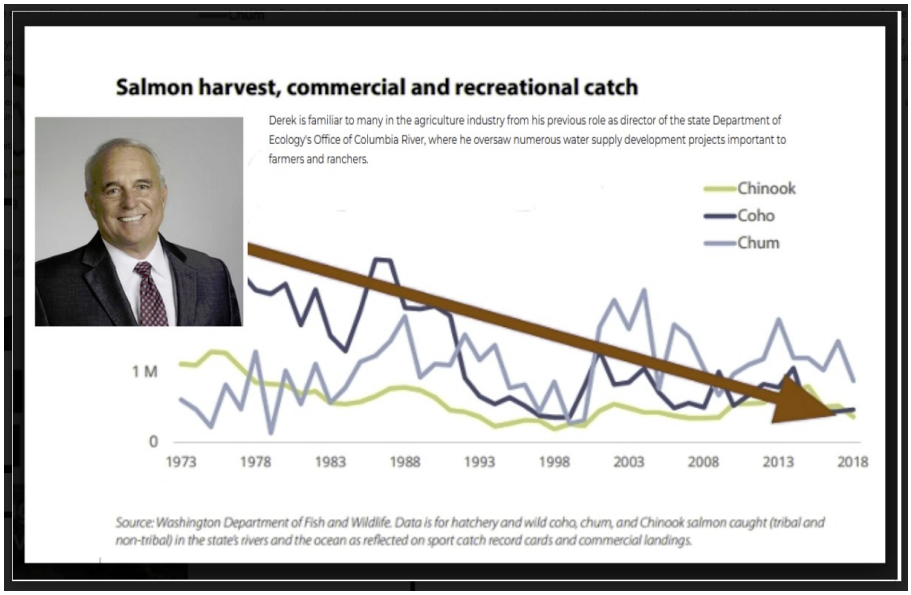
Source:

https://efotg.sc.egov.usda.gov/references/public/IL/General_Manure_Application_Guidelines_for_W

Other states such as Vermont use this approach and it has not been found to be a burden to agriculture per Anson Tebbetts the Vermont Secretary of Agriculture. As such, it is unlikely such a protective approach would be a burden in Washington state due to the Country wide implementation in the United States. As required it is both “known and reasonable”. This would help our ever dwindling salmon populations as well.

As a solution to the flood plain non point manure pollution existing in Washington state, and those proposed in this draft, it is suggested that other successfully flood plain programs such as Vermont be studied and implemented. Based on published water studies and other documents, it is clear that the above issues are not location dependent but have occurred over the course of many years over other river basins as well within Washington state. The rest of the country and the USDA has already have concluded the best and surest solution is to prohibit any manure applications in flood plains during the active flooding season.

If, and more importantly as shown, the Washington operators can not work within the regulations as they are now and the ECY and WSDA are unable to mitigate the problem in a timely manner, the best solution is to prohibit the applications like everyone else, everywhere else.



MANURE EXPORTS

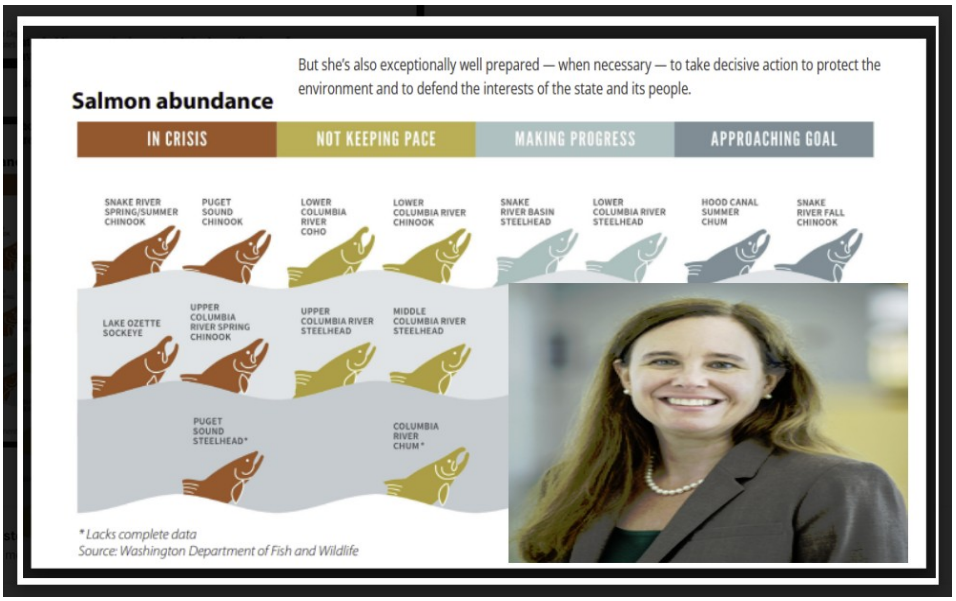
A RCRA style cradle to grave responsibility for manure needs to be created for CAFO manure disposal creating responsibility for any form of pollution caused by the CAFO from generation to application or other licensed disposal. The current regulations do not satisfactorily protect the environment after the export has taken place. This has been shown by the exported stored manure in the flood plain in this document. In some cases RCRA already applies to manure and also provides a good model for manure responsibility using the "cradle to grave" concept coupled with a fine schedule.

http://files.leveelabs.com/a2873d08b168bf352f8f3e64f43a8e20/resources/uploads/articles/Vol19ImproperAgriculturalManureHTL.pdf

Manure export is akin to the pre-cradle-to-grave RCRA era when tanker trucks would drive on the road and empty the hazardous waste on the pavement undetected controlled by a remote valve in the cab during the middle of the night. In CAFO manure exports a similar situation exists in the sense that exported manure applications do not receive the same regulatory scrutiny as the CAFO and the resulting application pollution goes undetected, just like dumping the hazardous waste on the road in the past. This weak regulatory link and transfer of responsibility needs to be eliminated for manure as it was for hazardous waste with RCRA. This issue has also been documented above with the stored "exported" manure on the Stillaguamish flood plain in contact with flood waters.

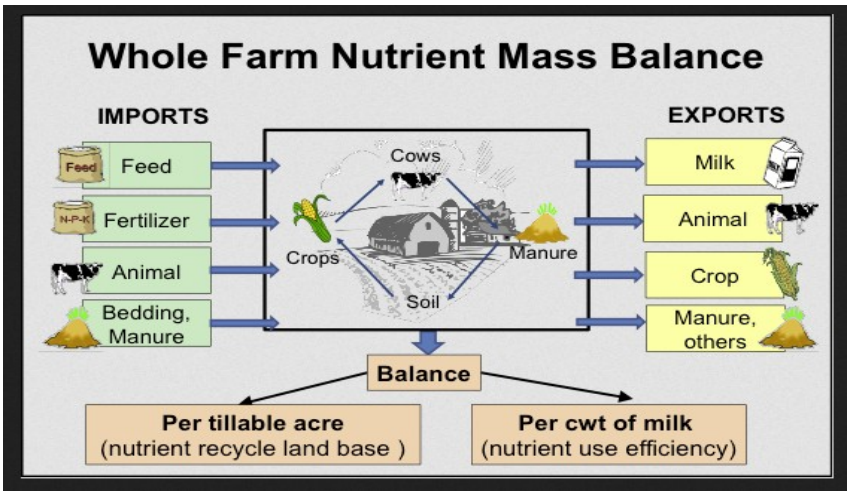
BIASED WATER QUALITY COMITTEE (MR. RAU)

A simple analysis shows the Agricultural Water Quality Committee is underrepresented by tribes and other non agricultural stakeholders which compose less than 8% of the membership leading to biased solutions and best management practices in favor of agriculture. Washington state must be more inclusive, such as Oklahoma in these committees as shown in their roster below. If other members are not available, or until positions are filled, the Agricultural Water Quality Committee needs to be responsible for contracting with Mr. Charlie Tebbutts and his law office at state expense to assure all agricultural compliance to existing requirements and stakeholder advocacy issues are adequately addressed especially for creating drafts such as this.



MATERIAL / NUTRIENT MASS BALANCE

To logically address and verify adequate manure disposal resources a Material / Nutrient mass balance document needs to be created for each CAFO. A whole farm nutrient mass balance is the difference in nitrogen (N), phosphorus (P), and potassium (K) imported onto the farm in the form of feed, fertilizer, animals, and bedding, and nutrient exported off the farm in milk, crops, animals and manure. Using whole-farm mass balance assessment operators be better able to identify farm-specific opportunities to reduce nutrient loadings and regulators will obtain confidence in operational regulatory compliance. Using a whole farm nutrient mass balance for a farm can help managers identify opportunities for improvements that impact farm profitability and the environment, namely manure applications resulting in improved water quality.



https://blogs.cornell.edu/whatscroppingup/2016/04/20/what-is-the-nutrient-balance-of-your-dairy-farm/

http://nmsp.cals.cornell.edu/NYOnFarmResearchPartnership/MassBalances.html

FINES and PENALTIES

The draft does not address fines for causing CAFO non point pollution or make reference to where they may be found, or repeated offenses. A schedule needs to be developed for punitive damages in the form of fines as well instead of relying on the toothless voluntary compliance that results only in verbiages such as the WSDA and ECY "working with" as lip service solutions without substantial changes. This voluntary approach only serves agricultural interests and does not protect water quality as the CAFO non point pollution occurs repeatedly without repercussions. The only response needed from the operator is "Again? Shucky darn, we'll get that 'nure thing right next time"...year after year and the ECY and WSDA are agreeable, the non point flood plain manure pollution never ends.

This is the current enforcement methodology which needs to change for non point pollution in flood plains by eliminating manure applications all together without exception.

All of this and several more examples complete with pictures and dates is verifiable on state email servers in the emails of Mr. Sandison, Ms. Watson, Mr. Rau, Mr. Jacobson, Mr. Sulak, and Mr. Kyrre.

This email below as well as on 2/15/22, provides a good summary and has other manure applications discussed in the same time which illuminate flood plain manure application pollution issues:

to:	"Flege, Kyrre (AGR)" <KFlege@agr.wa.gov>
cc:	Pirzadeh.Michelle@epa.gov, dsandison@agr.wa.gov, Julia.Reitan@washington.sierraclub.org, laura.watson@ecy.wa.gov, Andrew Hawley <Hawley@westernlaw.org>
date:	Feb 17, 2022, 11:40 AM
subject:	Re: Pioneer Highway Near Silvana and Other Dairy Manure Applications
mailed-by:	gmail.com

OTHER

- The permit also requires manure and other similar materials to be removed from public roadway if deposited. Mud from fields should also be required to be removed as this is caused by the operator and should not be a public responsibility to clean up after them.

- Manure application in flood plains no matter what size agricultural venture should be subject to the same requirements as suggested in these comments and proposed in these permits. Sloppy agriculture no matter how large or small contributes to lowered water quality.

- Because of potential public harm to waters of the United States and groundwater, all documents, permits, testing results, and records related to / potentially affecting the environment and population singularly or general population must be made publicly available for any agricultural venture in Washington state of commercial scale.

- Application methods and calibration should be discussed including injections as the preferred method outside the flooding season on flood plains.

- The permits should only apply to areas that endanger water sources or have animals for commercial use such dairy, meat, wool, or any other commercial use. Personal pets or hobby animals (personal subsistence or horses to ride etc.) should be excluded as should animals raised by organizations such as 4H or FFA unless there is a reasonable pollution concern which should be able to be addressed.

CONCLUSION AND CLOSING THOUGHTS

As Washington state's responsible guardians of our environment, water quality, and native fishing cultures protected by treaties, Ms. Watson and Mr. Sandison need to abandon their time proven failed policies once again reflected in the minimalist section S4, Manure Pollution Prevention contained within the Concentrated Animal Feeding Operation National Pollution Discharge Elimination System and State Waste Discharge General Permit drafts for reasons as documented above. Instead of their "yeah but" 4.S.3.f exclusions and exceptions they need to embrace successful proven regulatory practices and models for preventing non point pollution from CAFOs as suggested by the USDA and successfully implemented in other states for flood plains. Several other CAFO related issues have been identified / discussed and need to be addressed as listed in the top of this document, including the ECY and WSDA struggling to control non point pollution from CAFOs.

It is also time to take action and eliminate the fine but hollow in action penmanship as received from a program manager on 2/22/22:

WSDA is committed to implementation of both the Dairy Nutrient Management Act and Water Pollution Control Act in Washington. Our partnership with Ecology includes coordination and response to complaints to ensure the best technical assistance is provided and that violations of law are enforced to protect water quality. Moreover, the objective within both agency programs is to provide regular oversight to prevent poor manure management practices before they have negative impacts on water quality, including consideration of the long term impacts of climate change, and the changing agricultural landscape. WSDA is actively working with these farmers to ensure the quality of our natural resources and support a healthy agricultural community. I can provide you with a summary of the outcome of these investigations or others if you are interested. Thank you for sharing these concerns.

Despite this fine wordsmithing, arm waving, and flag waving, accomplishing nothing to prevent pollution, the need to simply eliminate all manure applications in flood plains in the draft CAFO permits has been clearly documented and shown in the Stillaguamish valley due to all facets of agriculture, including the regulators themselves. Declining fish populations also indicate the other river systems with flood plains throughout Washington state suffer from the same calamity perpetuated by the ECY and WSDA for decades.

The passenger pigeons had populations in the billions, once thought inexhaustible like salmon. Because of careless conservation and regulation, they are now extinct. We are now at less than 5% of historical salmon populations and the decreasing trend continues, our future generations will be talking about the demise of passenger pigeons and pacific salmon in the same breath wondering how the passenger pigeon lesson could have been ignored when there was still time to act.

It is time to take the first step away from this trend and eliminate all manure applications without

exception in flood plains between October 1st and April 15th.

Any permits need inspectors to assure the conditions are met and extension agents to provide the knowledge the operators need to comply with their permit. It is hoped that additional agency staffing also takes place making our Washington CAFOs the most profitable and environmentally friendly operations in the Country. Funds also need to be made available for current technologies such as wireless piezometer arrays to monitor ground water levels for regulatory compliance and applications.

Everyone likes to eat, on the other hand, senseless preventable pollution should not be tolerated or implicitly condoned or allowed through poor regulations especially when successfully proven and reasonable non burdensome solutions have been implemented elsewhere with the same agricultural activities.

I appreciate and would like to express my thanks to the many dedicated ECY and WSDA employees who responded back to me, it speaks quite well of both them and their departments. They are required do what the law states regardless of their own opinions or views. Even Mr. Sandison who has other opinions has responded to me. Thank you. I hope that I have done something to show you the need for change in the way flood plains are manged for agriculture and we move forward for the good of all in Washington state instead of the convenience of the few at the needless expense of the environment.

References, further information, and mentioned statistical summaries are below.

Looking forward to these positive changes,

John Q. Citizen

VERMONT

Agency of Agriculture, Food & Markets
Ag Resource Management Division
116 State Street
Montpelier, VT 05620
www.VermontAgriculture.com

[phone] 802-828-2431
[fax] 802-828-2361

Dear Floodplain Farmer,

Enclosed you will find a packet of information that will assist you with understanding and complying with the State's new requirements for agricultural fields located in a floodplain. These new requirements are detailed in the new Required Agricultural Practices (RAPs) which set baseline management requirements for farms of all sizes in Vermont. Compliance for the 2017 and 2018 cropping seasons begins with first understanding where and how the new floodplain RAPs apply on your farm and second, with taking proactive steps to plan to comply and meet the dates outlined in the RAPs.

The Agency of Ag is here to support you and your farm to understand the rules, assist with planning efforts if requested, and to provide technical and financial assistance directly to your farm to implement new management strategies, which may be required to comply with the rules. If at any time you have questions regarding how these new rules apply to your farm, please call the Agency of Ag Water Quality Division directly at: **802-828-2431**

The RAPs for agricultural floodplain management include:

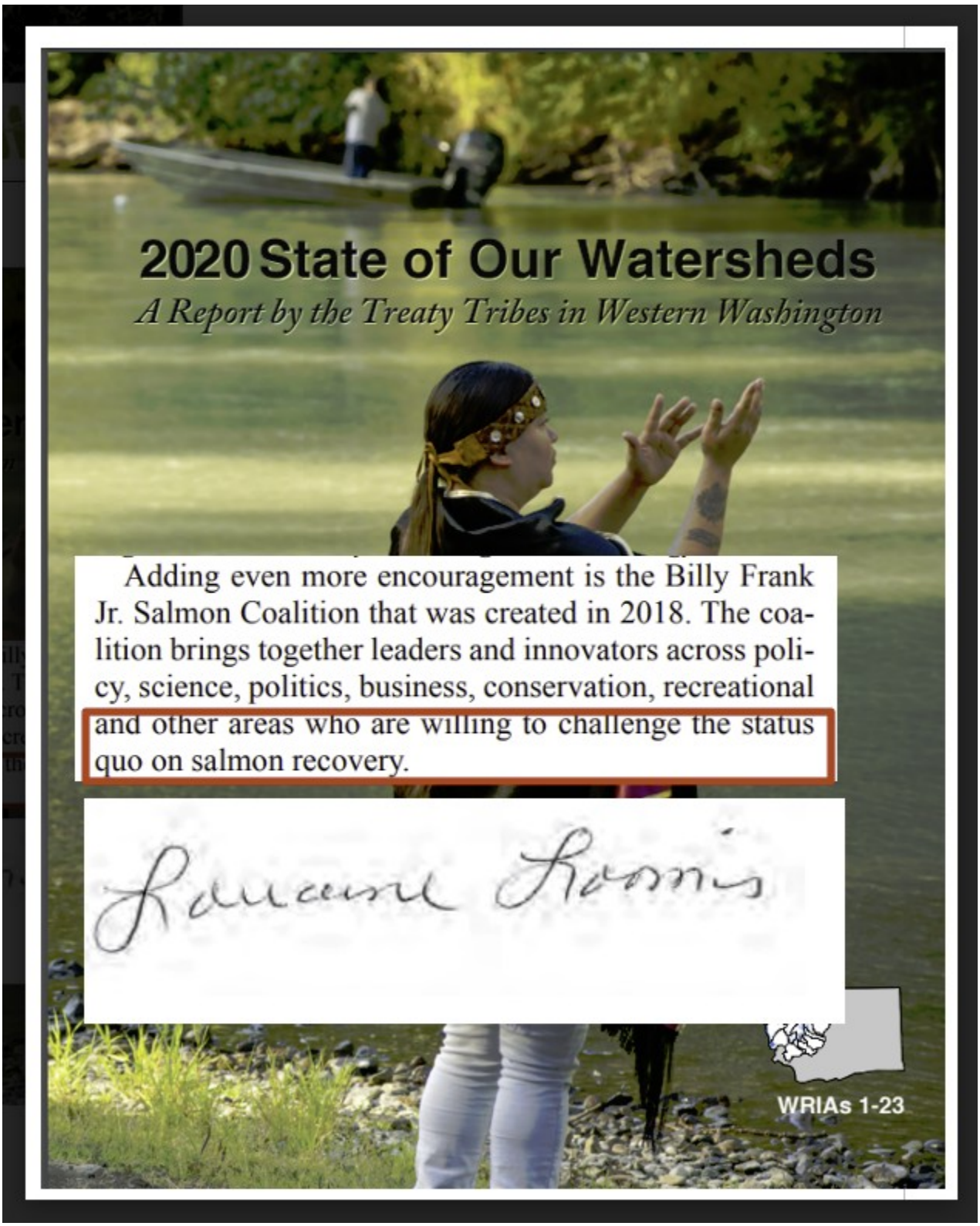
1. An extended winter manure spreading ban on frequently flooded soils: From October 16th – April 14th
2. Any manure applied to floodplains must be injected or otherwise incorporated within 48 hours, unless the field is in no-till, is cover cropped, or is planted to hay, pasture, or other perennial crop.
3. For floodplain fields that grow annual crops (e.g. corn for silage, sweet corn, soybeans, pumpkins), frequently flooded soils on those fields must be planted to cover crop by:
    a. October 1st if the cover crop is broadcast on the surface
    b. October 15th if the cover crop is drilled or otherwise incorporated into the soil
    c. **OR** maintain 30% cover on the surface of the crop field after harvest (e.g. weeds, post-harvest residue [chaff])

https://efotg.sc.egov.usda.gov/references/public/IL/General_Manure_Application_Guidelines_for_W

General Application Guidelines for Manure from Winter Feeding Stations

Manure is an excellent source of nutrients and organic matter for crop, pasture, and hay, fields. In spite of the known benefits for increasing crop yields, plant nutrients such as commercial fertilizer and manure are under increasing scrutiny due to concerns with water quality. Although healthy stands of perennial vegetation reduce runoff and soil loss, surface applied manure can still pose a risk to water quality. Use the following guidelines to minimize risks to surface and groundwater.

- Take soil tests every four years on fields where manure will be applied. Apply manure on the basis of crop nitrogen needs (N Basis) where soil test phosphorus levels (STP) are below 40-50 lbs. P/acre. Apply on the basis of phosphorus needs (P Basis) when STP levels are greater than 40-50 lbs. P/acre.
- Apply manure at the rate shown in Table 1 below, according to the amount of excess feed in the manure.
- Reduce commercial fertilizer rates when using manure as a nutrient source.
- Pastures grazed intensively seldom need significant applications of supplemental phosphorus or potassium as nearly 80% of these nutrients consumed by livestock are excreted in their manure.
- Service and calibrate application equipment to ensure manure is applied uniformly and at the correct rate. Do not clean application equipment in areas where water can get into a well, stream, river, or other waterbody.
- Do not apply manure within 200 feet of a stream, river, well, sink hole, tile drain inlet, or other waterbody. Consider larger setbacks on slopes greater than 5 percent.
- Do not apply manure on steep slopes unless measures are taken to control both soil erosion and runoff.
- Do not apply manure in sensitive areas (e.g. areas where the water table is 1 foot deep or less, where soils are extremely sandy or gravelly, in wetland areas, on fields that are saturated, on grassed waterways, in drainage areas, next to streams, or in a flood plain).
- Avoid manure applications on frozen or snow covered ground. If manure must be applied on frozen or snow covered ground, do so on areas where surface runoff is controlled.
- Do not apply prior to precipitation events where runoff amount or intensity would be expected to cause runoff.
- Avoid application when soils are wet in order to prevent compaction and rutting.
- Spread at times and in ways that will minimize potential odor problems (e.g. spread when the wind is not blowing, spread in the morning when the air is rising rather than in the afternoon, during holidays, etc.).
- Keep good records of manure applications. Record the crops grown, field(s) and acres that manure is applied to, rate of application, total amount of manure applied, time of application, conditions during application, crop yields, and soil and manure test results.


2020 State of Our Watersheds
A Report by the Treaty Tribes in Western Washington
Adding even more encouragement is the Billy Frank Jr. Salmon Coalition that was created in 2018. The coalition brings together leaders and innovators across policy, science, politics, business, conservation, recreational and other areas who are willing to challenge the status quo on salmon recovery.
WRIAs 1-23

Agricultural Pollution in Puget Sound:

Western

Cornell University
Cornell Cooperative Extension
HARVEST NEW YORK

Timothy Terry, Regional Farm Strategic Planning Specialist (April 2016)

10 Commandments of Manure Application

(King James version)

1. Thou shall not spread manure within 20' of a ditch, intermittent stream, or surface inlet unless injected or immediately incorporated. Thou shall record the date and time of such application.

2. Thou shall not spread manure within 100' of a pond, lake, wetland, or perennial stream unless an adequate vegetated buffer strip has been established then thou may not spread closer than 35'.

3. Thou shall not apply manure in fall or winter to open ground on high leaching index fields without first planting winter hardy cover crops where manure will be applied.

4. Thou shall not spread manure on saturated, frozen, or snow covered soils unless such spreading is absolutely necessary. When absolutely necessary, thou shall not spread within 48 hours of a predicted rainfall, snowmelt, or other runoff conditions.

5. Thou shall not spread manure within 100' of any well – yours or your neighbor's well. Thou shall know where wells border thy fields and the potential for groundwater contamination from thy farm's activity! Thou shall request information on the location of thy neighbor's (or rental landowner's) wells.

6. Thou shall not locate temporary manure piles within 300' of a well, surface water, or surface inlet. Thou shall locate them where clean water will be excluded and access is practical even during poor weather conditions.

7. Thou shall not spread manure in the fall or winter on fields that have a potential to flood.

8. Thou shall not exceed the soil's infiltration or water holding capacity in any total single application of liquid manure. Thou shall adjust this amount to avoid runoff or loss to subsurface tile drains.

9. Thou shall not allow fall and winter manure applications to exceed 50% of the next crop's nitrogen needs.

10. Thou shall not commence manure spreading without an annual detailed review from thy crop consultant. Thou may reduce, but thou shall not exceed, the recommended applications rates.

Nonpoint Source Working Group – PARTICIPANTS OKLAHOMA

AEP	Oklahoma Farm Bureau
American Farmers & Ranchers	Oklahoma Geological Survey
Association of Central OK Governments	Oklahoma Independent Petroleum Association
Bureau of Land Management	Oklahoma Municipal League
Bureau of Reclamation	Oklahoma Rural Water Association
City of Oklahoma City	Oklahoma Scenic Rivers Commission
City of Tahlequah	Oklahoma Secretary of the Environment
City of Tulsa	Oklahoma State University
Environmental Protection Agency Region 6	Oklahoma Water Resources Board
Farm Service Agency	Osage Tribe
Indian Nations Council of Governments	OU Health Sciences Center
Inter-tribal Environmental Council	OU Water Center
Land Legacy	Pawnee Tribe
Natural Resource Conservation Service	Poteau Valley Improvement Authority
Nature Conservancy	Save the Illinois River
Oklahoma Association of Conservation Districts	Sierra Club
Oklahoma Cattlemen's Association	Tulsa Municipal Utility Authority
Oklahoma Corporation Commission	University of Oklahoma
Oklahoma Dept. of Agriculture, Food & Forestry	U.S. Army Corps of Engineers
Oklahoma Dept. of Environmental Quality	U.S. Fish and Wildlife Service
Oklahoma Dept. of Transportation	U.S. Geological Survey
Oklahoma Dept. of Wildlife Conservation	

WASHINGTON GOVERNOR

JAY INSLEE

POLICY BRIEF
December 2021

In Washington and across the Pacific Northwest, salmon populations are struggling. Climate change, habitat loss, pollution and other factors are hampering salmon recovery efforts. Gov. Jay Inslee is proposing an updated strategy and additional investments to protect and restore salmon, steelhead and trout populations across the state.

Saving our struggling salmon

Governor proposes new strategy and major investments to protect and restore salmon populations across the state

More than 30 years ago, the Snake River's sockeye salmon was declared endangered. Since then, the federal government has listed 13 additional salmon species in Washington as endangered or threatened. Dwindling Chinook salmon populations, meanwhile, are pushing Southern Resident orcas closer to extinction.

People across the region have been working tirelessly to bring salmon back from the brink, and those efforts have restored thousands of acres of fish habitat. Still, salmon and other species are losing more habitat than they are gaining. Over 70% of our endangered or threatened salmon and steelhead populations are not keeping pace with recovery goals, are still in crisis or require immediate action.

Climate change has increased wildfires and droughts, worsened ocean conditions, warmed streams, shifted food webs, intensified pollutants, thrown predator populations out of balance, and brought ecosystems that support salmon and people to a tipping point.

Drawing from decades of work by numerous experts, stakeholders and tribes, Inslee has put forward an update to the state's salmon recovery strategy. It builds on the work of the State of Salmon in Watersheds report that the Governor's Salmon Recovery Office completes every two years.

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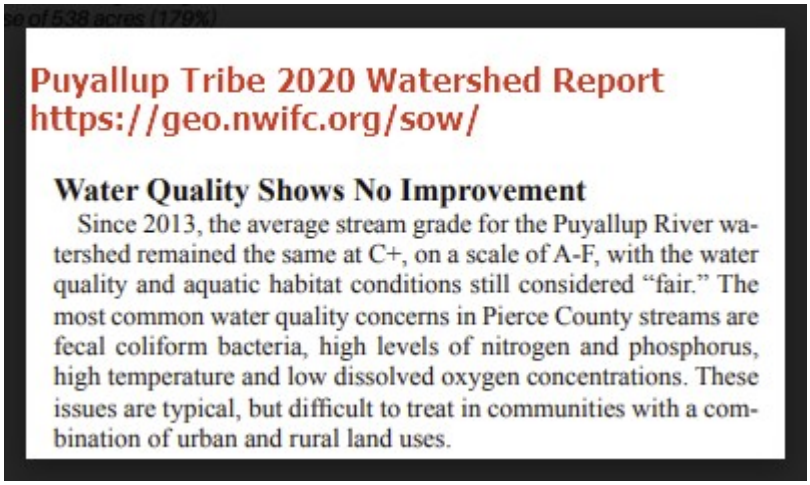
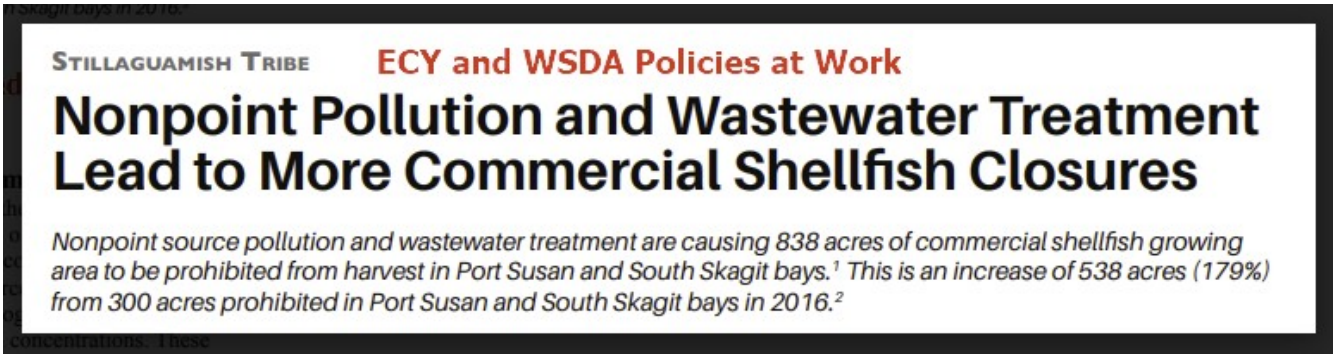


Puyallup Tribe 2020 Watershed Report
https://geo.nwifc.org/sow/

Water Quality Shows No Improvement

Since 2013, the average stream grade for the Puyallup River watershed remained the same at C+, on a scale of A-F, with the water quality and aquatic habitat conditions still considered "fair." The most common water quality concerns in Pierce County streams are fecal coliform bacteria, high levels of nitrogen and phosphorus, high temperature and low dissolved oxygen concentrations. These issues are typical, but difficult to treat in communities with a combination of urban and rural land uses.



STILLAGUAMISH TRIBE

ECY and WSDA Policies at Work

Nonpoint Pollution and Wastewater Treatment Lead to More Commercial Shellfish Closures

Nonpoint source pollution and wastewater treatment are causing 838 acres of commercial shellfish growing area to be prohibited from harvest in Port Susan and South Skagit bays.[1] This is an increase of 538 acres (179%) from 300 acres prohibited in Port Susan and South Skagit bays in 2016.[2]

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Local Residents Enjoying an Unrestricted Outing In The Sun On a Chehalis River Beach