Whatcom Clean Water Program Quarterly Report
April 1 - June 30, 2015

1. FECAL COLIFORM BACTERIA SAMPLING & RESULTS

LOWER NOOKSACK/PORTAGE BAY WATERSHED

Monitoring fecal coliform density - Agency and tribal staff sample water for fecal coliform (FC) bacteria at various locations in the lower Nooksack River watershed. FC bacteria monitoring results are reported in FC per 100 milliliters of sample (FC/100mL) for each sample location.

Whatcom County Public Works (Public Works) coordinates routine FC monitoring at fixed location sites in the Nooksack watershed. Results of routine sampling since January 2014, sampling location maps and further water quality information are available from Whatcom County Public Works Natural Resources webpage at http://www.whatcomcounty.us/1072/Water-Quality.

Figure 1—Public Works routine fecal coliform sampling results (FC/100mL), Nooksack watershed—Quarter 2, 2015

Monitoring site name and sub-basin	Anderson Creek	Nooksack mainstem	Kamm Creek		Nooksack mainstem	Scott Ditch			Fishtrap Creek					Bertrand Creek	Schneider Ditch	Cougar Creek	Tenmile Creek	Nooksack mainstem	Nooksack mainstem
	AND	M5	K1	K1a	M4	S3	S2	S1	F4	DDW	DDE	F3	F1	B1	SD	COU2	T1	M2	M1
Date																			
4/8	40	<2	84	44	4	64	42	78	450	58	42	66	360	37	153	30	20	19	5
4/30	90	10	280	20	<2	420	72	140	390	42	764	84	84	98	270	30	104	19	48
5/11	42	9	1,100	130	7	370	137	210	230	52	440	220	290	50	94	32	80	200	480
5/28	260	12	420	118	25	370	280	340	664	82	210	460	220	72	310	42	94	20	7
6/8	138	40	104	76	19	250	84	390	320	360	380	450	280	230	610	240	84	120	108
6/25	66	20	79	410	17	260	210	600	260	710	NS	NS	280	72	NS	NS	664	10	7
Monitoring site description	Anderson Creek at Roberts Rd	Nooksack River at Everson	Kamm Creek at Hampton Rd	Tributary to Kamm Creek upstream of Hampton Rd	Nooksack River at Hannegan Rd	Scott Ditch at Thiel Rd	Scott Ditch at Hannegan Rd	Scott Ditch at Bylsma Rd	Fishtrap Creek at Main St	West Double Ditch at Pine St	East Double Ditch at Pine St	Double Ditch branch of Fishtrap Creek at Main St	Fishtrap Creek at River Rd	Bertrand Creek at Rathbone Rd	Schneider Ditch at Harksell Rd	Cougar Creek at Woodland Rd	Tenmile Creek at Barrett Rd	Nooksack River at Ferndale (Main St)	Nooksack River at Marine Dr

indicates result below 100 FC/100mL

indicates result between 100 and 200 FC/100mL

indicates result above 200 FC/100mL

NS no sample

Figure 1 summarizes Public Works' April–June 2015 routine sampling results in the Nooksack watershed. Figure 1 results are arranged from upstream to downstream in the Nooksack system; Anderson Creek (AND) is the most upstream sampling location and M1 is farthest downstream location sampled by Public Works.

In addition to routine sampling throughout the Lower Nooksack/Portage Bay watershed, Public Works sampled approximately twenty monitoring sites weekly in the Fishtrap Creek sub-watershed focus area. Public Works collaborates with the North Lynden Watershed Improvement District (WID) to monitor in the focus area. In response to elevated FC counts, WID members conducted their own sampling in relevant locations to help identify and correct pollution sources. Public Works also conducted follow-up sampling. Several monitoring sites had no flow beginning in mid-May and mid-June.

Washington Department of Agriculture, Dairy Nutrient Management Program (DNMP) staff sample FC density in water in focus areas related to where dairy facilities and dairy manure application fields are located. DNMP staff also monitor sites along the U.S.-Canadian border to measure FC concentrations flowing into Whatcom County from Canada (through the cross-border Bertrand Creek and Fishtrap Creek systems).

Figure 3 illustrates approximate locations of where DNMP and Department of Ecology (Ecology) staff collect water samples at the U.S.-Canadian border in the Bertrand watershed. Figure 4 locates where in the Fishtrap watershed water quality is monitored at or near the U.S.-Canadian border by DNMP, Public Works, or Nooksack Indian Tribe staff.

Figure 3 - Sampling locations at U.S.– Canadian border, Bertrand watershed

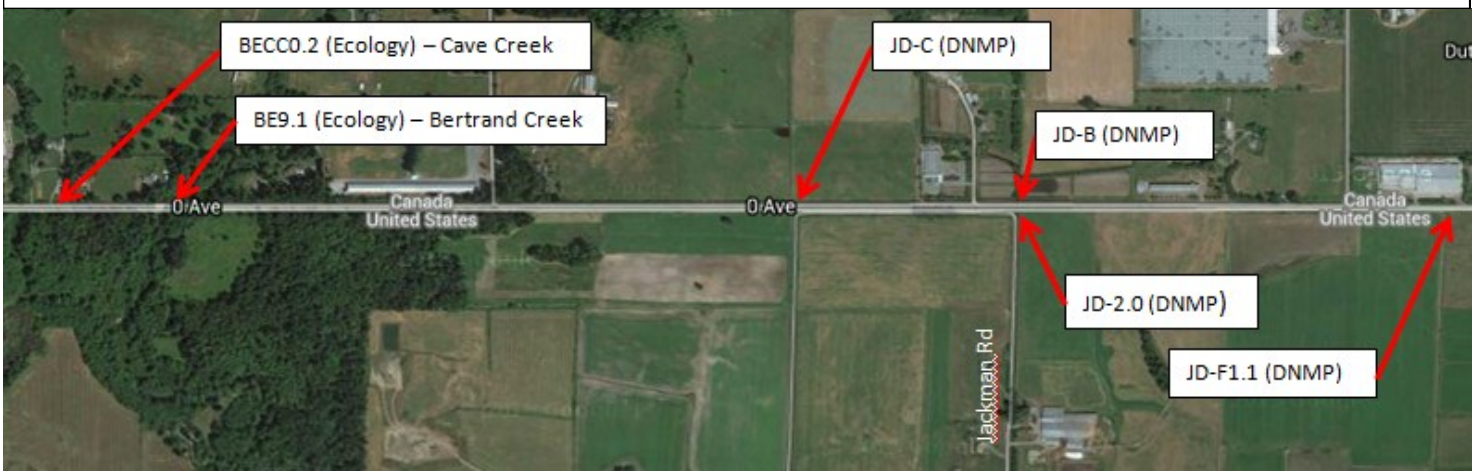

Figure 4 - Sampling locations at U.S.– Canadian border, Fishtrap watershed

Water in the Nooksack River and Drayton Harbor watersheds must meet Washington's "primary contact recreation" bacteria criteria for fresh water. For single sample results like those listed in Figure 1 and throughout this report, the fecal coliform level should be below 200 in order to protect the health of people contacting the water during recreational use.

Figure 5 - DNMP and Nooksack Indian Tribe sampling results (FC/100mL), Fishtrap watershed U.S.-Canadian border— Quarter 2, 2015

Station ID	DD-CA1	F-DDW3.8	F-DDE3.8	SW11
Date				
27-Apr	4,500			
11-May		52	64	32
8-Jun				58
Location Description	Peppin Brook (Double Ditch) west of 272 St and north of Zero Ave. Sampled from Canada	West side of Double Ditch Rd (Peppin Brook) south of Boundary Rd	East side of Double Ditch Rd (Peppin Brook) south of Boundary Rd	Fishtrap Creek at Northwood Rd bridge

Figure 5 reports results of U.S.– Canadian border sampling in the Fishtrap Creek watershed by DNMP staff and by Nooksack Indian Tribe.

Whatcom Clean Water Program partners remain concerned about periodic high concentrations of fecal coliform measured flowing south at border sites. State agencies and EPA staff communicate data to Canadian counterparts and continue to discuss ways to improve the quality of shared waters.

Washington Department of Ecology, Water Quality Program (Ecology) staff conduct routine sampling in Bertrand Creek, Kamm Creek, and Scott Ditch watersheds. Figures 6, 7 and 9 report results for samples collected by DNMP and by Ecology staff.

Due to the high count (2400 FC/100mL) at KA-6 in late April (Figure 7), DNMP staff re-opened a prior investigation to identify and correct a pollution source in the Kamm watershed.

In addition to routine sampling, Ecology staff conducted source identification sampling (SIS) in the Kamm watershed this quarter (Figure 8). SIS results help identify location of fecal coliform pollution sources within specific reaches of stream, from individual properties and from specific sources within properties.

Figure 6 - DNMP and Ecology fecal coliform sampling results (FC/100mL), Bertrand watershed—Quarter 2, 2015

Monitoring site name	BECC0.2 (border)	BEMC1.8	BE9.1 (border)	JD-C (border)	JD-B (border)	JD-2.0 (border)	JD-HLAT	JD-1.5	JD-1.45	JD-0.38	JD-0.2	JD-F1.1 (border)	GM-DN	JD-F0.5	JD-F0.0	DF-2	DF-3	BEDF2.2	B1
Date																			
8-Apr	27	74	78															22	23
27-Apr				37	350			210			210	2	5	48	48				
11-May	570	112	300			530	340	600		350	310	121		220	310	220	74	48	33
2-Jun	1491	dry	700															350	270
8-Jun	38	dry	800			490			873		410							96	280
Monitoring site description	Cave Creek sampled north side Zero Ave in Canada; tributary to Bertrand; public.	McClellan Creek at Weidkamp and Badger; public.	Bertrand Creek mainstem at border sampled north side Zero Ave in Canada; public.	North side of Zero Ave, at culvert opening, west of JD-B and Jackman ditch. Public; sampled in Canada.	North side Zero Ave at culvert opening; upstream of JD-2.0. Public; sampled in Canada	Jackman ditch at border; south side Zero Ave; accessed from private property U.S. side	East side Jackman Rd; downstream of dairy application fields; sample taken from ditch downstream of JD-C; public.	30 feet north of H Street on east side of Jackman Rd; public.	South side of H Street Rd; Jackman ditch at culvert opening; public.	0.38 miles north of Jackman Rd bridge; east side Jackman Rd across from power line pole; public.	Jackman Rd bridge; sampled from bank with pole on west side of Jackman Rd; public.	Ditch flowing south from indoor ag facility at border, 25 feet south of Zero Ave, accessed from U.S. side.	West side Guide Meridian at lower culvert; drains to F lateral.	30 ft north of H Street at lateral ditch; south of Canadian indoor ag facility. Sampled from west bank of ditch; public.	30 feet east of Jackman Rd on the north side of H Street; public.	East side Flynn/Schuleyman Rd at culvert flowing to city stormwater facility; public.	Duffner Ditch before confluence and turn at city stormwater; public.	Duffner Ditch after confluence of branches measured by DF-2 and DF-3	Downstream Bertrand mainstem at Rathbone Rd

Figure 7 - DNMP and Ecology fecal coliform sampling results (FC/100mL), Kamm watershed—Quarter 2, 2015

Monitoring site name	KA-9	KASI-2/K3	KA-8/K2	KA-4	MD2	KA-1	KA-2.5	KA-2	KA-3b	KA-3	KA-6	KA-5/MD3	MD1/ Mormon 1	K0
Date														
8-Apr			28		440							250	17	60
27-Apr	42	70	127	146		74	40		28	40	2,400	390	150	
11-May	230	122	42	4				200				88	52	1646
22-May		110	88		200							19	145	250
2-Jun		390	360		290							dry	270	673
8-Jun		84	70		dry							dry	270	78
Monitoring site description	South side Badger Rd at Kamm Creek culvert opening; public.	North side Kamm Rd at Kamm Creek east culvert; public (same site as Ecology K3).	West side Northwood Rd at Kamm Creek bridge; public (same site as Ecology K2).	South side of Hampton Rd at culvert opening; public.	Just downstream of where Morman ditch intersects Hampton Rd	North side Timon Rd at culvert opening; 0.4 miles east of Stickney Island Rd;	North side Timon Rd at driveway east in KA-3b reach; public.	South side Timon Rd at culvert opening; public	Ditch immediately south of KA-3; sampled on east side; public.	East side Slotemaker Rd at culvert opening; public.	North side Timon Rd at culvert opening; public.	North side Hampton Rd at culvert; public; Ecology site MD3.	West side Northwood Rd at Mormon ditch. Ecology sample bi-weekly. DNMP samples alternating weeks when field	Downstream Kamm Creek at Hampton Rd (same site as County K1).

Figure 8 – Ecology source identification sampling summary – Quarter 2, 2015
Kamm Creek

Date	
4/8	Sampled downstream of Wiser Lake outfall at Old Guide Road in response to questions about waterfowl contribution to fecal coliform bacteria concentrations in the lake. Result was 5 FC/100mL.
4/10	Sampled Morman Ditch upstream, downstream, and from within heifer rearing facility. Results of nine samples ranged from "not detected" to 410 FC/100mL. Source identification work is ongoing.
5/11	Sampled southern tributary to Morman Ditch upstream and downstream of heifer rearing facility. Results support bacteria source originates within the facility. Results of three samples ranged from 180 to 1055 FC/100mL.
6/2	Results of ten samples ranged from 44 to 10,600 FC/100mL. Sampled Kamm Road tributary to Kamm Creek: • Cattle access to surface water identified during overflight; sampling results confirmed bacteria pollution resulting from cattle access to swale. Sampled southern Morman Ditch tributary upstream and downstream of heifer facility: • Low flow with high concentration of bacteria confirmed upstream of facility. Results inconclusive downstream. Sampled swale originating on a beef cattle operation; low results.
6/9	Results of six samples ranged from 54 to 3600 FC/100mL. Sampled at beef cattle facility to help determine if surface runoff from facility or lagoon discharges to a ditch draining to Kamm Creek. Results indicate further source identification work is needed.

Figure 9 - Ecology fecal coliform sampling results (FC/100mL), Scott Ditch watershed— Quarter 2, 2015

monitoring site name	SD1	SD2	SD3	SD4	SD5	SD6	SD7	SD8
Date								
8-Apr	50	12	10	48	19	38		22
24-Apr	755	86	290		56	300	56	66
11-May	60	84		84	82	58	112	74
8-Jun	200	88	230	52	76	80	108	94

DNMP staff conducted two aerial surveys during the quarter (on April 2 and May 5) to help identify potential bacteria pollution sources. Ecology staff participated in the April 2 flyover.

- April 2 - The flyover observed areas of the Drayton Harbor and Sumas watersheds, as well as sub-basins of the Nooksack watershed, including Bertrand Creek, Kamm Creek, Fishtrap Creek, Scott Ditch, and Tenmile Creek.

  DNMP inspectors did not observe a discharge in Bertrand or Kamm watersheds during the flight. Observations during the flyover triggered one investigation at a Fishtrap Creek watershed dairy and conversations with several other operations regarding manure application practices that present potential risk of pollution to surface water.

- May 5 - Based on aerial photos, DNMP staff spoke with several producers about better managing splash plate applications to avoid applying too much manure to fields. The flyover included Nooksack sub-basins of Fishtrap, Scott, and Anderson, as well as other watersheds outside the Nooksack. Inspectors noted that operators appeared to be using adequate setbacks from waterways when applying manure to fields.

Based on the flyovers, Ecology inspectors:

- Noted a high-risk manure application in the Kamm watershed; inspectors provided regulatory technical assistance to the producer.
- Confirmed that a beef cattle and horse operation had not installed best management practices (BMPs) as formerly agreed to. The inspector sent the landowner a warning letter.
- Confirmed that cattle had access to a saturated swale discharging to a tributary of Kamm Creek where Ecology has measured high concentrations of FC. An inspector visited the property and recommended water quality protection BMPs to the landowner.
- Confirmed that poor conditions on two properties of interest have not improved. Ecology inspectors have encouraged cooperative compliance from the property owners for many months. In early April Ecology issued each of these properties an Immediate Action Order. One property is in the California Creek watershed and one property is in the Bertrand watershed.
- Confirmed that owners who allowed cattle to directly access Silver Creek had corrected the pollution source. The landowners chose to remove cattle from the property.

DRAYTON HARBOR WATERSHED *Monitoring fecal coliform density*

Whatcom County Public Works (Public Works) coordinates regular monitoring of FC at approximately 30 fixed location sites within the Drayton Harbor watershed. A map of routine sampling sites and monitoring results since January 2013 can be viewed from the Public Works Natural Resources webpage at http://www.whatcomcounty.us/1072/Water-Quality. Nooksack Indian Tribe Natural Resources staff routinely samples additional sites within the Drayton Harbor watershed on coordinated sampling dates.

Through Whatcom County's Pollution Identification and Correction (PIC) program, three drainage areas are prioritized for reducing fecal coliform bacteria pollution due to patterns high FC bacteria concentrations. During the quarter, focus area sampling included:

- Lower Dakota drainage - Ten monitoring sites were sampled weekly
- Brown Malloy drainage - Six monitoring sites were sampled weekly. Monitoring locations in this drainage had no flow in mid-June.
- Loomis Trail drainage - Eight monitoring sites were sampled weekly. Several locations had no flow beginning in mid-May and mid-June.

2. PROPERTY OUTREACH, ASSESSMENTS & RESULTS

Through the PIC program, Public Works coordinated landowner contact in Drayton Harbor focus areas and in the Fishtrap Creek sub-basin of the Nooksack watershed prioritized for bacteria pollution reduction. Public Works contacts residents in focus areas through a series of letters. The letters provide information about neighborhood water quality conditions, how to assess properties for risk of contributing fecal coliform bacteria pollution to community waterways, and how to access technical and financial assistance if needed. (See http://www.whatcomcounty.us/1072/Water-Quality for more information about Whatcom County's PIC program.)

To specific properties in the areas where the highest fecal coliform concentrations are detected, the letters communicate the importance of assessing properties for potential pollution sources and requests response from residents. For livestock properties, WCD offers non-regulatory technical assistance to identify risks and to correct livestock-related pollution sources if any are found. Figure 10 summarizes outreach attempts and status of landowner response.

Figure 10 - Whatcom County landowner contact summary - Quarter 2, 2015

focus area drainage	potential livestock parcels	1st letter	2nd letter	3rd letter	other contact	regulatory referral	Status of landowner response
Lower Dakota	27	27	20	2	0	1	44% cooperative or confirmed property has no livestock
Brown Malloy	19	17	9	0	2	0	42% cooperative or confirmed property has no livestock
Loomis Trail	11	9	5	0	2	0	55% cooperative or confirmed property has no livestock
Total	57	53	34	2	4	1	

In addition to letters sent by Public Works as documented in Figure 10, landowner contacts included:

- Lower Dakota Creek drainage -
  - Whatcom Conservation District (WCD) provided technical assistance to four landowners (see Figure 11 for WCD technical assistance summary).
  - Public Works referred a property to Whatcom County Planning and Development Services (PDS) because the resident had not responded to multiple contact attempts. This parcel has a fish bearing stream and cattle. The requested contact was to determine whether cattle are fenced out of the critical area buffer and if adequate best management practices (BMPs) are in place to protect water quality.
- Brown Malloy drainage -
  - PDS staff contacted a landowner to monitor implementation status of an existing farm plan.
  - One landowner installed 1560 linear feet of livestock exclusion and confinement fencing using County cost-share funds.
- Loomis Trail drainage - WCD contacted a cooperator to review BMPs that had been planned in the past. WCD attempted contact with other landowners through phone calls.
- Lower California Creek drainage -
  - Public Works referred six parcels to County Health and one parcel to PDS in response to a series of high fecal coliform counts detected through focus area and routine monitoring. Follow-up monitoring and analysis suggested a human sewage source between Cal 3.1 and Cal1.9 monitoring site locations. County Health began the process of following up with property owners and investigating suspected on-site sewage system source.
- Fishtrap Creek drainage -
  - Approximately 330 landowners in the Fishtrap watershed received an introductory PIC program letter from the County Executive and Whatcom County Council chair. A joint letter from the North Lynden Watershed Improvement District (WID) board, Public Works, and WCD was sent to approximately 180 landowners in the North Lynden WID area. The letter included a description of monitoring, water quality concerns, and potential sources of bacteria in the Fishtrap watershed as well as a request to help identify and fix pollution sources.
- Tenmile Creek drainage -
  - An early June complaint described sewage from a trailer draining directly into a ditch that flows to Ten Mile Creek. County Health investigated and noted the presence of an unoccupied recreational vehicles (RV) used for farm workers during the harvest season. The RV was connected to a below-ground holding tank. Health staff confirmed the tank was empty and did not see evidence of flow to the ditch. Health staff explained to landowner the permit process for a holding tank, and that sewage could not be generated out of the RV. Health staff followed up a week later to confirm RV dump valve was closed and the transport line and holding tank were removed. Health planned to make another follow-up visit during harvest season.

Figure 11 - Whatcom Conservation District technical assistance to non-dairy livestock owners/operators — Quarter 2, 2015

watershed	landowner contacts	# technical assistance	farm plans completed	BMPs planned	BMPs implemented
Drayton	22	12	1 (2.1 acres)	Prescribed grazing (6.3 acres) Manure storage facility Access control (2.5 acres)	Exclusion fencing (1,560 ft) Manure storage facility Heavy use area (1,000 ft^2)
Nooksack	1	1	1 (21.9 acres)	None	Cover crop (19.2 acres) Irrigation mgt (1.3 acres) Nutrient mgt (21.9 acres) Pest mgt (21.9 acres) Prescribed grazing (1.4 acres)

Washington Department of Agriculture, Dairy Nutrient Management Program (DNMP) staff inspected five dairy operations in Kamm and Bertrand focus area watersheds during the quarter (see Figure 12 for inspection activity and Figure 13 for enforcement activity).

Figure 12 - DNMP focus area inspection activity summary—Quarter 2, 2015

Date	Watershed	Inspection Type	Outcome
4/9	Bertrand	Investigation (continued)	Notice of Correction pending for lack of manure containment. Inspector provided regulatory technical assistance regarding containment and lagoon storage.
4/28	Bertrand	Routine	No issues noted. Waterfowl appear to have contributed to elevated fecal coliform bacteria counts earlier in the spring. Inspector provided regulatory technical assistance regarding pasture and manure solids containment.
5/22	Kamm	Routine	No issues noted. Inspector provided regulatory technical assistance regarding manure lagoon and pasture management.
6/2	Kamm	Routine-Records	No issues noted.
6/18	Bertrand	Routine-Records	Inspector issued warning letter for incomplete recordkeeping. Inspector provided regulatory technical assistance.

DNMP staff also conducted 16 routine inspections, two follow-up inspections and six investigations outside focus areas of Bertrand and Kamm watersheds. Two of the investigations were in response to complaints:

- Complaint 1 - Report of a goat dairy in Ferndale storing a large pile of manure near a stream. Staff evaluated the site, determined no pollution had occurred or was occurring and provided recommendations to landowner about agronomic application of manure to fields.
- Complaint 2 - Report of an herbicide application on a dairy farm with runoff to a ditch. DNMP staff visited the site, took photos, and spoke to the farm manager, as well as to staff at the Natural Resources Conservation Service, Whatcom Conservation District, and WSDA pesticide compliance and Ecology pesticide compliance departments.

Figure 13 - DNMP focus area enforcement activity summary — Quarter 2, 2015

Date	Watershed	Type	Notes
pending	Bertrand	Notice of Correction pending.	Investigation (March 20-April 9)
4/1	Fishtrap	Penalty 15ADGDNMP5001	Penalty 15AGRDNMP5001 settled. The dairy closed on May 31, 2015.
5/7 & 6/10	Tenmile	Technical Assistance Referral / Warning letter	Complaint investigation (ERTS 656476). Inspector identified no discharge, but a potential to pollute persists. Referred to Whatcom Conservation District for technical assistance.
5/13	Kamm	Notice of Correction 15AGRDNMP6009	Lagoon leak identified during 2/20/2015 flyover. An EPA inspection on 2/24/2015 confirmed the leak . The inspection did not identify a discharge to surface water, but identified the potential to pollute groundwater.
6/18	Bertrand	Warning letter	A routine records inspection noted lack of complete records.
7/1	Tenmile	Notice of Correction 15AGRDNMP7002	Investigation (ERTS 652941) conducted October 21, 2014 to March 25, 2015. Discharge source at dairy not identified.
May-June	LLPL ditch; directly enters Nooksack mainstem half mile west of Guide Meridian	Penalty 15AGRD-NMP5002	In process of negotiated settlement for lagoon leak with discharge to surface waters, coupled with a lack of livestock exclusion fencing and lack of complete containment.

Ecology (non-dairy livestock properties) inspectors interacted with 19 landowners during the quarter through multiple phone calls, correspondence and site visits and completed five property inspections (see Figure 14 for inspection summary). Ecology issued four warning letters during the quarter to landowners in the Portage Bay/Nooksack watershed, and one Immediate Action Order to a landowner in the Drayton Harbor watershed.

Figure 14 - Ecology inspection activity summary—Quarter 2, 2015

Date	Watershed	Action	Outcome
4/9	Ten Mile	Evaluated a horse boarding facility in response to complaint (ERTS 655819) about manure-contaminated water flowing from horse confinement areas to roadside ditch flowing to Tenmile Creek.	Inspector discussed pollution concerns and recommended landowner seek technical assistance from Whatcom Conservation District (WCD). In consultation with WCD, landowner moved fences back 50 feet from ditch and improved roof water management.
5/19	Scott	Evaluated a beef cattle operation and provided regulatory technical assistance due to high stocking rate and site conditions that present likely pollution paths during wet season.	Inspector recommended corrective actions to prevent manure-related pollution of surface water. Recommendations included fencing cows out of a swale to Scott Ditch, improving confinement area and manure storage to prevent polluted runoff during wet season, and installing roof gutters to direct clean water away from confinement area. Inspector also discussed proper pasture management and manure application setbacks. Inspector recommended landowner seek technical assistance from WCD. Follow up required.
6/8	Kamm	Conducted inspection on a heifer pasturing operation in follow-up to October 2014 visit. Inspector scheduled visit after aerial photos documented cattle access to surface water in swales flowing to Kamm Creek.	Inspector again recommended operator seasonally exclude cattle from swales until no surface water is present in the swales during the summer. Inspector recommended harrowing the area before the rainy season to break up manure and promote bacteria die-off. Follow-up required.
6/18	Scott	Evaluated a small beef cattle operation.	Inspector noted pasture and manure appeared to be well-managed, with designated livestock confinement and watering area well away from surface water.
6/22	Scott	Evaluated a former dairy farm facility now being used as a dry-cow pasturing and liquid manure storage for neighboring dairy.	Inspector observed no site or infrastructure conditions likely to cause manure-related pollution. Discussion included proper manure application setbacks, proper lagoon maintenance, and recommendation to maintain records of manure imported from neighboring dairy.

Ecology inspectors confirmed that seven landowners implemented twelve best management practices (BMPs) during the quarter to control animal access or proximity to waterways, and to improve timing and placement of land-applied manure to prevent pollution discharge to waterways.

Ecology inspectors confirmed that four landowners were making voluntary progress on five additional BMPs. By implementing the BMPs (and in one case, removing livestock from a property) nine property owners eliminated 16 sources of pollution, including animal access to streams, poorly managed confinement and heavy use areas, manure accumulations on overgrazed pastures, and uncontained manure piles.

3. OTHER ACTIVITIES

Outreach, collaboration and coordination

Marine Recovery Area - On-site Sewage System (OSS) Operation & Maintenance (O&M) Program
Whatcom County's local health officer designated the Portage Bay Shellfish Protection District as a Marine Recovery Area (MRA) due to a portion of the shellfish growing areas in Portage Bay being downgraded by the state Department of Health due to seasonally high concentrations of FC.

Whatcom County Council acknowledged the designation of Portage Bay as a MRA on May 12, 2015. The expanded MRA for the local OSS O&M program includes watershed drainages that may affect water quality in the Portage Bay Shellfish Protection District (Nooksack Watershed). The Local Management Plan requires that all OSS located within the MRA be evaluated by a licensed O&M professional or certified homeowner.

County Health will be mailing OSS O&M notifications in a phased approach and is coordinating with PIC program outreach efforts to notify OSS owners in areas prioritized for FC pollution reduction.

Based on water quality data, OSS owners in the North Lynden Watershed will be contacted first. County Health will schedule training workshops to provide homeowners certification opportunities to enable homeowner to complete their own OSS evaluations.

Community events and coordination efforts
Whatcom Clean Water Program (WCWP) partners meet approximately every six weeks to discuss data and share information with other agency staff. WCWP partners participate in many other efforts to exchange information with independent groups and local stakeholders.

Staff from Ecology's Water Quality Program and from the Environmental Assessment Program presented information about water quality and fecal coliform bacteria pollution reduction work at a Bertrand Watershed Conference in June. Whatcom Conservation District (WCD) and Ecology's Environmental Assessment Program hosted the conference at Berthusen Park.

WCD and Public Works staff jointly participated in the Bertrand Watershed Conference and other local events during the quarter to engage community members, distribute outreach materials and discuss water quality, the PIC program, citizen science programs, and website information. Several WCWP partners also participated in these coordination meetings and outreach events:

- Coordinated Resource Management (CRM) meeting with Watershed Improvement District (WID) Board
- Fishtrap Watershed Exploration Day
- City of Lynden Public Works Committee Meeting
- Shellfish protection district advisory committee meetings (Drayton Harbor and Portage Bay)
- Birch Bay Beach Day
- Blaine Water Fest

WCD also hosted a Dairy Speaker Series session, Fishtrap Storm Team Training Day, Twin Brook Creamery Tour and participated in the WSU Master Gardener Plant Sale, a Global Panel Event, and Farm Speaker Series.

Dairy Nutrient Management Program (DNMP) staff participated in local shellfish protection district advisory committee meetings, coordinated with Whatcom County and the joint WID Board, attended the Lummi Nation First Salmon Celebration, and presented information at the Bertrand Watershed Conference. Beyond Whatcom County, DNMP staff presented at the National Waste to Worth Conference in Seattle (early April) and participated in a dairy nutrient management meeting between Oregon Department of Agriculture and Washington Department of Agriculture in Tillamook, Oregon (mid-June).