

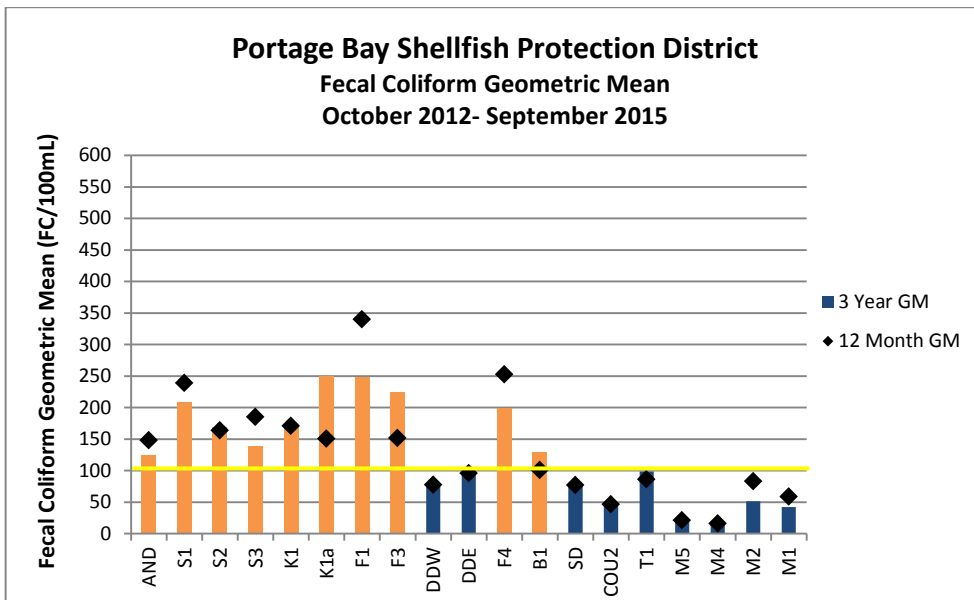
# Nooksack River Watershed Water Quality Status

## Fecal Coliform Bacteria- September 2015

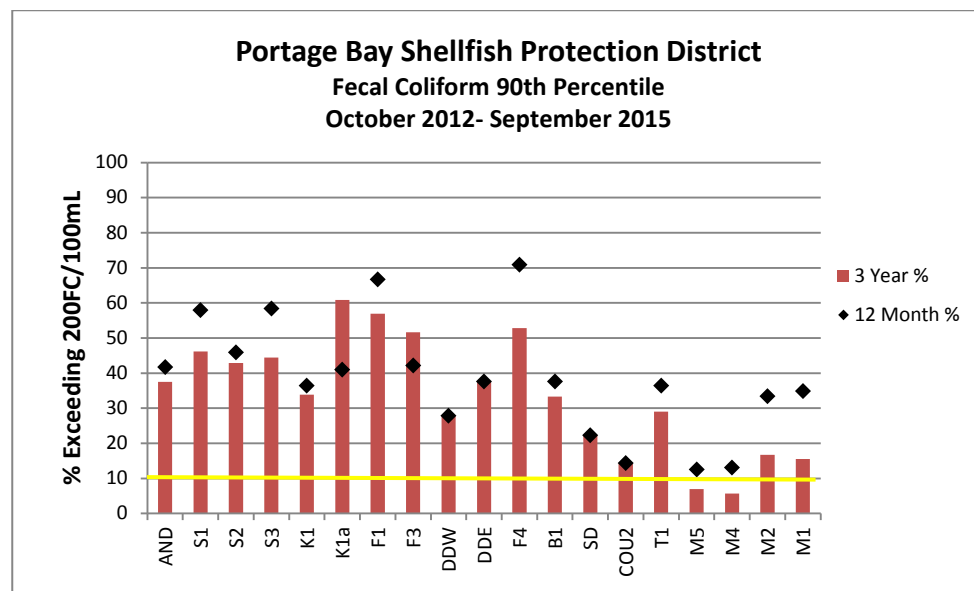
Overview: Whatcom County Public Works (WCPW) coordinates regular monitoring of fecal coliform levels at a fixed-network of approximately 17 sites in the Nooksack River watershed. All samples are analyzed at Department of Ecology certified laboratories using standard methods for fecal coliform analysis. Quality control steps are used to measure variability due to sampling methods and conditions. Sampling events are pre-scheduled, typically at least a month in advance, and provide data from a broad spectrum of environmental conditions throughout the year.

Everyone wants clean water to support healthy drinking water, safe recreational uses, quality water for irrigation and livestock, and healthy fish and shellfish to consume. To protect these uses, the state Department of Ecology developed water quality criteria for bacteria in both fresh and marine waters. In the Nooksack River watershed, there are two standards that must be met for freshwater: water samples must have less than an average of 100 fecal coliform per 100 milliliters of water (100 FC/ 100mL), and less than 10% of the samples can have more than 200 FC/100mL.

### Comparing Bacteria Levels to the Standards:



Part A: Geometric Mean- This graph illustrates fecal coliform geometric means at routine stations. The yellow line indicates the water quality standard. The bars indicate the geometric mean for the last three years and the black dot indicates the geometric mean for the past 12 months. Orange bars indicate stations not meeting the standard. A black dot above the bar indicates bacteria levels have been increasing in the past twelve months.



Part B: % Exceeding 200- This graph illustrates the percent of samples exceeding 200 FC/100 mL at routine stations. The yellow line indicates the water quality standard. The bars indicate the % exceeding 200 FC/100mL for the last three years and the black dot indicates the % exceeding 200 FC/100mL for the past 12 months. A black dot above the bar indicates bacteria levels have been increasing in the past twelve months.

Nooksack River Watershed- 2014/2015 Fecal Coliform Bacteria Data: This table provides the individual results at each station for each routine sampling run in 2014/2015. Results in red exceeded 200 FC/100mL.

|            | Anderson at Roberts | Scott at Bylsma | Scott at Hannegan | Scott at Thiel | Kamm at Hampton | Trib to Kamm Upstream of Hampton | Fishtrap at River Road | Double Ditch at Main Street | Double Ditch West at Pine | Double Ditch East at Pine | Fishtrap at Main Street | Bertrand at Rathbone | Tennile at Barrett | Schneider at Harskell | Cougar at Woodlyn | Nooksack Mainstem at Everson | Nooksack Mainstem at Lynden | Nooksack Mainstem at Ferrdale | Nooksack Mainstem at Marine Drive |
|------------|---------------------|-----------------|-------------------|----------------|-----------------|----------------------------------|------------------------|-----------------------------|---------------------------|---------------------------|-------------------------|----------------------|--------------------|-----------------------|-------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------------|
| Date       | AND                 | S1              | S2                | S3             | K1              | K1a                              | F1                     | F3                          | DDW                       | DDE                       | F4                      | B1                   | T1                 | SD                    | COU2              | M5                           | M4                          | M2                            | M1                                |
| 1/14/2014  | 104                 | 710             |                   | 143            | 132             | 228                              | 430                    |                             |                           |                           | 104                     | 286                  | 86                 |                       |                   | 38                           | 47                          | 100                           | 200                               |
| 1/27/2014  | 12                  | 96              |                   | 66             | 86              | 430                              | 220                    |                             |                           |                           | 141                     | 54                   | 48                 |                       |                   | 5                            | 4                           | 32                            | 30                                |
| 2/11/2014  | 157                 | 474             |                   | 430            | 486             | 450                              | 690                    |                             |                           |                           | 217                     | 244                  | 240                |                       |                   | 60                           | 31                          | 42                            | 38                                |
| 2/13/2014  | 400                 | 3,800           |                   | 210            | 550             | 220                              | 7,500                  |                             |                           |                           | 68                      | 2,900                | 100                |                       |                   | 15                           | 22                          | 400                           | 290                               |
| 2/26/2014  | 66                  |                 |                   | 200            | 200             | 33                               | 380                    |                             |                           |                           | 200                     | 120                  | 50                 |                       |                   | 7                            | 7                           | 100                           | 88                                |
| 3/24/2014  | 9                   | 90              |                   | 48             | 86              | 66                               | 1,264                  |                             |                           |                           | 34                      | 15                   | 78                 |                       |                   | 1                            | 1                           | 5                             | 1                                 |
| 4/3/2014   | 270                 | 320             |                   | 500            | 200             | 72                               | 100                    | 92                          |                           |                           | 40                      | 19                   | 20                 |                       |                   | 1                            | 1                           | 4                             | 5                                 |
| 4/23/2014  | 58                  | 76              |                   | 98             | 76              | 32                               | 100                    | 540                         |                           |                           | 210                     | 28                   | 212                |                       |                   | 2                            | 4                           | 60                            | 33                                |
| 5/5/2014   | 2                   | 7,200           |                   | 4,400          | 10,400          | 4,500                            | 9,900                  | 12,400                      |                           |                           | 6,500                   | 29,200               | 19,800             |                       |                   | 350                          | 200                         | 2,600                         | 550                               |
| 5/21/2014  | 410                 | 76              |                   | 72             | 92              | 360                              | 250                    | 230                         |                           |                           | 280                     | 92                   | 74                 |                       |                   | 4                            | 15                          | 42                            | 22                                |
| 6/2/2014   | 163                 | 118             |                   | 220            | 691             | 146                              | 117                    | 86                          |                           |                           | 116                     | 138                  | 104                |                       |                   | 33                           | 20                          | 40                            | 25                                |
| 6/30/2014  | 350                 | 480             |                   | 260            | 151             | 2,200                            | 116                    | 102                         |                           |                           | 210                     | 112                  | 430                |                       |                   | 37                           | 32                          | 48                            | 58                                |
| 7/16/2014  | 199                 | 540             |                   | 470            | 70              | 746                              | 250                    | 200                         |                           |                           | 430                     | 200                  | 127                |                       |                   | 14                           | 7                           | 98                            | 86                                |
| 7/30/2014  | 390                 | 270             | 200               | 320            | 92              | 2,000                            | 163                    | 230                         |                           |                           | 240                     | 280                  | 141                |                       |                   | 50                           | 44                          | 54                            | 50                                |
| 8/6/2014   | 230                 | 390             | 160               | 130            | 54              | 410                              | 350                    | 1,510                       |                           |                           | 310                     | 280                  | 150                |                       |                   | 68                           | 64                          | 28                            | 42                                |
| 8/19/2014  | 410                 | 320             | 370               | 28             | 220             | 691                              | 260                    | 310                         |                           |                           | 250                     | 270                  | 210                |                       |                   | 50                           | 76                          | 74                            | 44                                |
| 9/3/2014   | 4,100               | 590             | 150               | 82             | 155             | 116                              | 430                    | 440                         |                           |                           | 2,800                   | 240                  | 2,000              |                       |                   | 410                          | 270                         | 230                           | 82                                |
| 9/16/2014  | 200                 | 82              | 600               | 4              | 74              | 102                              | 72                     | 2,300                       |                           |                           | 66                      | 72                   | 82                 |                       |                   | 66                           | 20                          | 14                            | 23                                |
| 10/1/2014  | 490                 | 76              | 919               | 17             | 48              | 96                               | 86                     | 400                         |                           |                           | 72                      | 40                   | 25                 |                       |                   | 33                           | 28                          | 590                           | 460                               |
| 10/14/2014 | 3,300               | 746             | 200               | 928            | 764             | 270                              | 3,200                  | 1,228                       | 9                         | 35                        | 2,300                   | 320                  |                    |                       |                   | 973                          | 470                         | 891                           | 420                               |
| 11/6/2014  | 480                 | 260             | 80                | 200            | 76              |                                  |                        | 145                         |                           |                           | 400                     | 210                  |                    | 96                    | 23                | 112                          | 260                         | 200                           | 480                               |
| 11/18/2014 | 68                  | 1,428           | 370               | 80             | 68              | 480                              | 290                    | 46                          | 7                         | 20                        | 6,300                   | 46                   | 52                 | 20                    | 23                | 7                            | 4                           | 360                           | 250                               |
| 12/12/2014 | 82                  |                 | 33                | 370            | 220             |                                  |                        | 440                         | 340                       | 220                       | 410                     | 420                  | 230                | 200                   | 52                | 17                           | 17                          | 40                            |                                   |

|            | Anderson at Roberts | Scott at Bylsma | Scott at Hannegan | Scott at Thiel | Kamm at Hampton | Trib to Kamm Upstream of Hampton | Fishtrap at River Road | Double Ditch at Main Street | Double Ditch West at Pine | Double Ditch East at Pine | Fishtrap at Main Street | Bertrand at Rathbone | Tenmile at Barrett | Schneider at Harsksell | Cougar at Woodlyn | Nooksack Mainstem at Everson | Nooksack Mainstem at Lynden | Nooksack Mainstem at Ferndale | Nooksack Mainstem at Marine Drive |
|------------|---------------------|-----------------|-------------------|----------------|-----------------|----------------------------------|------------------------|-----------------------------|---------------------------|---------------------------|-------------------------|----------------------|--------------------|------------------------|-------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------------|
| Date       | AND                 | S1              | S2                | S3             | K1              | K1a                              | F1                     | F3                          | DDW                       | DDE                       | F4                      | B1                   | T1                 | SD                     | COU2              | M5                           | M4                          | M2                            | M1                                |
| 12/29/2014 | 14                  | 250             | 72                | 33             | 19              | 66                               | 260                    | 17                          | 19                        | 15                        | 220                     | 92                   | 20                 | 58                     | 40                | 2                            | 4                           | 290                           | 9                                 |
| 1/14/2015  | 22                  | 37              | 42                | 72             | 74              | 37                               | 135                    | 37                          | 40                        | 35                        | 58                      | 44                   | 5                  | 32                     | 22                | 5                            | 2                           | 9                             | 2                                 |
| 1/27/2015  | 25                  | 62              | 200               | 32             | 240             | 280                              | 74                     | 27                          | 40                        | 10                        | 45                      | 62                   | 500                | 12                     | 14                | 4                            | 12                          | 43                            | 38                                |
| 2/2/2015   | 48                  | 146             | 52                | 88             | 82              | 410                              | 10,300                 | 11,400                      | 12,800                    | 12,000                    | 40                      | 68                   | 9                  | 20                     | 40                | 2                            | 4                           | 964                           | 560                               |
| 2/24/2015  | 32                  | 152             | 104               | 176            | 112             | 60                               | 540                    | 16                          | NS                        | NS                        | 32                      | 44                   | 20                 | 12                     | 24                | 8                            | 4                           | 12                            | 16                                |
| 3/10/2015  | 740                 | 680             | 480               | 760            | 180             | 120                              | 52                     | 27                          | 24                        | 11                        | 50                      | 5                    | 14                 | 27                     | 9                 | 5                            | 2                           | 9                             | 5                                 |
| 3/30/2015  | 70                  | 440             | 460               | 860            | 560             | 170                              | 200                    | 160                         | 100                       | 100                       | 220                     | 680                  | 68                 | 120                    | 70                | 5                            | 5                           | 90                            | 74                                |
| 4/8/2015   | 40                  | 78              | 42                | 64             | 84              | 44                               | 360                    | 66                          | 58                        | 42                        | 450                     | 37                   | 20                 | 153                    | 30                | <2                           | 4                           | 19                            | 5                                 |
| 4/30/15    | 90                  | 140             | 72                | 420            | 280             | 20                               | 84                     | 84                          | 42                        | 764                       | 390                     | 98                   | 104                | 270                    | 30                | 10                           | <2                          | 19                            | 48                                |
| 5/11/15    | 42                  | 210             | 137               | 370            | 1,100           | 130                              | 290                    | 220                         | 52                        | 440                       | 230                     | 50                   | 80                 | 94                     | 32                | 9                            | 7                           | 200                           | 480                               |
| 5/28/15    | 260                 | 340             | 280               | 370            | 420             | 118                              | 220                    | 460                         | 82                        | 210                       | 664                     | 72                   | 94                 | 310                    | 42                | 12                           | 25                          | 20                            | 7                                 |
| 6/8/15     | 138                 | 390             | 84                | 250            | 104             | 76                               | 280                    | 450                         | 360                       | 380                       | 320                     | 230                  | 84                 | 610                    | 240               | 40                           | 19                          | 120                           | 108                               |
| 6/25/15    | 66                  | 600             | 210               | 260            | 79              | 410                              | 280                    | NS                          | 710                       | dry                       | 260                     | 72                   | 664                | NS                     | NS                | 20                           | 17                          | 10                            | 7                                 |
| 7/6/15     | 530                 | NS**            | 490               | 691            | 141             | 240                              | 320                    | NS                          | 550                       | dry                       | 210                     | 260                  | 470                | dry                    | 100               | 74                           | 64                          | 60                            | 100                               |
| 7/20/15    | 755                 | NS**            | 270               | 360            | 116             | 82                               | 430                    | NS                          | dry                       | dry                       | 270                     | 280                  | 290                | dry                    | 580               | 580                          | 80                          | 250                           | 320                               |
| 8/3/15     | 410                 | NS**            | 410               | 370            | 82              | 370                              | 430                    | dry                         | dry                       | dry                       | 330                     | 230                  | 637                | dry                    | 260               | 80                           | NS***                       | 88                            | 30                                |
| 8/19/15    | 360                 | 114             | NS                | 250            | 104             | 117                              | 260                    | NS                          | dry                       | dry                       | 490                     | 220                  | 102                | 510                    | 52                | 200                          | 86                          | 210                           | 56                                |
| 9/10/15    | 200                 | 100             | 133               | 500            | 92              | 92                               | 110                    | 96                          | 10                        | 40                        | 161                     | 84                   | 72                 | 52                     | 300               | 27                           | 27                          | 33                            | 42                                |
| 9/21/15    | 1,128               | 1,055           | 220               | 120            | 1,237           | 673                              | 600                    | 470                         | 35                        | 102                       | 1,028                   | 148                  | 682                | 52                     | 48                | 350                          | 420                         | 510                           | 700                               |

\*NS- no sample

\*\* - stagnant

\*\*\*- construction