

To: Maggie Peyton (Upper Nehalem WC), Gareth Ferdun (Lower Nehalem WC)  
CC: John Runyon (ICF Jones & Stokes), Ken Bierly (OWEB)  
Date: August 20, 2008  
**Re: Nehalem Data Synthesis – Final products**

Maggie & Gareth:

This memo outlines the final products that I am delivering to the Upper and Lower Nehalem Watershed Councils.

**Sixth-field outreach maps and AQI reports:**

Copies of the outreach maps (in Adobe PDF format) are available for download at the project website (<http://www.oregonwatersheds.net/nehalem/>). These maps are produced at the sixth-field watershed scale. In addition, aquatic habitat inventory (AQI) summary reports for those reaches surveyed by Todd Boswell can also be downloaded for each sixth-field watershed. Note that GIS data used to produce these maps (described below) are being sent to the Watershed Councils on DVD

**Additional data requested by the watershed Councils:**

The following additional items, requested by the watershed councils, are also available for download at the project website (<http://www.oregonwatersheds.net/nehalem/>):

- ODFW Reach summary data (Excel spreadsheet): This is a summary table of all ODFW reach-level AQI data for the Nehalem Basin.
- Metadata for ODFW Reach summary data (PDF): This is the metadata for the ODFW reach-level AQU data
- PowerPoint presentations (zipped): These are all of the PowerPoint presentations presented to the TAC over the course of the project
- Data synthesized for PowerPoint presentations (zipped): These are the underlying data used in developing the PowerPoint presentations
- Coho intrinsic potential summary by 6th and 7th field HUCs (Excel spreadsheet): This is a summary table of coho IP by watershed and sub-watershed.

**GIS data to produce Outreach Maps:**

The GIS data DVD has a folder for the Upper and Lower Nehalem Watershed Councils (i.e., UNWC and LNWC). Each folder contains an ArcView 3.x project file, and the associated data<sup>1</sup>.

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<sup>1</sup> All GIS data is NAD 1983 Oregon Statewide Lambert International feet  
<http://www.oregon.gov/DAS/EISPD/GEO/data/format.shtml>

The following is a discussion of the data included on the disk. The discussion is arranged by data source.

### **Watershed and Subwatershed boundaries (“reo” folder):**

- **huc7\_nehalem.shp**: This shapefile shows the 7<sup>th</sup>-field HUCs defined for the Nehalem Basin. These were derived from the Pacific Northwest Hydrography Framework (PNWHF) version of the Watershed Boundary Dataset (WBD)<sup>2</sup>, combined with the Coastal Landscape Analysis and Modeling Study (CLAMS) hydrologic unit data set<sup>3</sup>. The CLAMS data were used to define the 7<sup>th</sup> field boundaries, but the 6<sup>th</sup>-field names were derived from the PNWHF data set. Some editing was performed to make watershed outlets correspond to the ODFW stream layers.
- **huc6\_nehalem.shp**: Sixth-field HUC boundaries derived by combining 7<sup>th</sup> field polygons from the previous data set that are located within the same 6<sup>th</sup>-field HUC.
- **huc6\_nehalem\_rev1.shp**: Sixth-field HUC boundaries from the Pacific Northwest Hydrography Framework (PNWHF) version of the Watershed Boundary Dataset (WBD).

### **Digital orthoquad maps (“naip” folder):**

- **xxx\_ol.jpg**: A background DOQ was produced for each of the 6<sup>th</sup>-field watersheds. The original source data<sup>4</sup> were National Agricultural Imagery Program (NAIP) digital ortho images for Tillamook, Washington, Clatsop and Columbia Counties. The DOQs were merged and clipped to each of the 6<sup>th</sup>-field HUCs. A ¼ mile buffer around the HUC boundary was included.
- **buff.shp**: This shapefile has each 6<sup>th</sup>-field HUC with a ¼ mile buffer around the HUC boundaries.

### **Todd Boswell Data (“Boswell” folder):**

- **boswell\_surveys.shp**: This shapefile was produced by combining all of the Boswell surveys from 2002-2005 into one shapefile.
- **boswell\_surveys\_reach\_breaks.shp**: This is a point coverage of the reach breaks for the Boswell survey data.
- **boswell\_surveys\_buff150.shp**: This is a 150 foot buffer of the Boswell survey reaches. This was used to illustrate LWD priority areas on the outreach maps.
- **boswell\_surveys\_buff250.shp**: This is a 250 foot buffer of the Boswell survey reaches. This was used to illustrate riparian priority areas on the outreach maps.

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<sup>2</sup> <http://hydro.reo.gov/hu.html>

<sup>3</sup> <http://www.fsl.orst.edu/clams/cfsl0233.html>

<sup>4</sup> e.g., [ftp://ftp.apfo.usda.gov/pub/GatewayCatalogDetails/MetaData/NAIPM05/ortho\\_1-1\\_1n\\_s\\_or057\\_2005\\_2.sid.txt](ftp://ftp.apfo.usda.gov/pub/GatewayCatalogDetails/MetaData/NAIPM05/ortho_1-1_1n_s_or057_2005_2.sid.txt)

### **ODF&W data (“odfw” folder):**

- **neh05rch.shp**: This shapefile shows the ODFW AQI reaches in the Nehalem Basin<sup>5</sup>. was produced by combining all of the Boswell surveys from 2002-2005 into one shapefile
- **neh05rch\_breaks.shp**: This is a point coverage of the reach breaks for the ODFW AQI data
- **neh05rch\_buff150\_itsct\_huc6.shp**: This is a 150 foot buffer of the ODFW survey reaches. This was used to illustrate LWD priority areas on the outreach maps.
- **neh05rch\_buff250\_itsct\_huc6b.shp**: This is a 250 foot buffer of the ODFW survey reaches. This was used to illustrate riparian priority areas on the outreach maps.
- **coho\_v12\_17100202\_itsct\_huc7.shp**: This shows coho distribution within the Nehalem Basin. The original data set<sup>6</sup> was intersected with the 7<sup>th</sup>-field HUC shapefile described above
- **streams\_itsct\_huc7.shp**: This shows all streams within the Nehalem Basin. The original data set<sup>7</sup> was intersected with the 7<sup>th</sup>-field HUC shapefile described above

### **Coastal Landscape Analysis and Modeling Study (“clams” folder):**

- **north\_ip\_gt05\_itsct\_huc7.shp**: The original data set<sup>8</sup> was intersected with the 7<sup>th</sup>-field HUC shapefile (described above). To reduce file size all of the stream segments having a coho intrinsic potential less than 0.5 were removed from this data set.

### **ODEQ FLIR data (“Flir” folder):**

- **flir\_merge.shp**: The original point shapefile was supplied by ODEQ at the beginning of this project. Median surface stream temperature, as determined using FLIR imagery, was provided for a subset of the data points. The temperature difference was calculated between each point in the shapefile, and the point immediately upstream of that point. These differences were smoothed by calculating a five-period moving average of the temperature difference, which is the value shown on the outreach maps.

### **Completed OWEB projects (“oweb” folder):**

- **owri\_lines\_nehalem\_itsct\_huc7.shp**: OWEB provided shapefiles at the start of this project that show completed enhancement projects within the Nehalem Basin. This shapefile shows those projects that were digitized as polylines. The original data set was intersected with the 7<sup>th</sup> - field HUC shapefile (described above)

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<sup>5</sup> <http://oregonstate.edu/dept/ODFW/freshwater/inventory/nworgis.html>

<sup>6</sup> [http://nrimp.dfw.state.or.us/web%20stores/nrimp/pub/gis/k100/meta/anad\\_dist\\_v12.htm](http://nrimp.dfw.state.or.us/web%20stores/nrimp/pub/gis/k100/meta/anad_dist_v12.htm)

<sup>7</sup> [http://nrimp.dfw.state.or.us/web%20stores/nrimp/pub/gis/k100/cover/rivers/str\\_100k.zip](http://nrimp.dfw.state.or.us/web%20stores/nrimp/pub/gis/k100/cover/rivers/str_100k.zip)

<sup>8</sup> [http://www.fsl.orst.edu/clams/cfsl\\_streams.html](http://www.fsl.orst.edu/clams/cfsl_streams.html)

- **OWRI\_points\_Nehalem.shp:** This shapefile shows those projects that were digitized as points. The original data set was intersected with the 7<sup>th</sup> - field HUC shapefile (described above)
- **owri\_polygons\_nehalem\_as\_pts.shp:** This shapefile shows those projects that were originally digitized as polygons. I turned these polygons into centroid points in order for them to display properly at the scale that they are presented. The data set was then intersected with the 7<sup>th</sup> - field HUC shapefile (described above)

#### **Data sets from the Oregon Geospatial Enterprise Office (“sscgis” folder):**

- **pls\_litsct\_huc6.shp:** This shapefile shows the public land survey system polygons. The original data<sup>9</sup> were intersected with the 6<sup>th</sup>-field watershed shapefile described above.
- **west\_forestown\_itsct\_buff.shp:** This shapefile shows the principal landowners within the Nehalem Basin. The original data<sup>10</sup> were intersected with the 6<sup>th</sup>-field HUC with a ¼ mile buffer shapefile described above.

#### **Bureau of Land Management Data (“BLM” folder)<sup>11</sup>:**

- **gtrn\_itsct\_huc7.shp:** This shapefile shows all roads, with the exception of Highways. The original data<sup>12</sup> was converted to the shapefile format, clipped to the Nehalem Basin, and intersected with the 7<sup>th</sup>-field HUC shapefile (described above)
- **blm/highways\_itsct\_huc7.shp:** This shapefile shows all highways. The original data<sup>13</sup> was converted to the shapefile format, clipped to the Nehalem Basin, and intersected with the 7<sup>th</sup>-field HUC shapefile (described above)

#### **Tidal Wetland Prioritization data for the Nehalem River estuary (“Brophy” folder)<sup>14</sup>:**

- **n\_tidalw\_ol\_itsct\_buff.shp:** This shapefile gives the tidal wetland prioritization rating as given in the 2005 report produced by Laura Brophy of GreenPoint Consulting<sup>15</sup>. The original data set provided at the start of this project was intersected with the intersected with the 6<sup>th</sup>-field HUC with a ¼ mile buffer shapefile described above.

#### **Other data (“Homemade” folder):**

- **lasar\_temp\_ol.shp:** This point shapefile shows temperature monitoring locations, as reported in the ODEQ Laboratory Analytical Storage and Retrieval (LASAR) database<sup>16</sup>. The attribute table gives the seven-day average maximum temperature for each location. Where there are multiple years of data this value represents the average across all sample years.

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<sup>9</sup> <http://www.oregon.gov/DAS/EISPD/GEO/docs/metadata/plss.htm>

<sup>10</sup> [http://navigator.state.or.us/sdl/data/metadata/k24/west\\_forestown.pdf](http://navigator.state.or.us/sdl/data/metadata/k24/west_forestown.pdf)

<sup>11</sup> LNW data set only. The same data for the UNWC is provided with the supplemental data described below.

<sup>12</sup> <http://www.blm.gov/or/gis/data-details.php?theme=dt000002&grp=GTRN&data=ds000041>

<sup>13</sup> <http://www.blm.gov/or/gis/data-details.php?theme=dt000002&grp=GTRN&data=ds000041>

<sup>14</sup> LNW data set only.

<sup>15</sup> <http://greenpointconsulting.com/>

<sup>16</sup> <http://deq12.deq.state.or.us/lasar2/>

### **Supplemental data**

Per your request I am providing the following supplemental GIS data:

- Geology (geology/orgeo\_polys\_clip.shp): The original data<sup>17</sup> was clipped to the Nehalem Basin.
- Roads (blm/gtrn\_itsct\_huc7.shp; blm/highways\_itsct\_huc7.shp): These are the same shapefiles as described under BLM data above.
- 10m DEM<sup>18</sup>: This includes a 10-meter resolution DEM (seamless.usgs.gov/10m/dem/), and a hillshade grid derived from the DEM (seamless.usgs.gov/10m/hlshd1/).
- Contour lines (seamless.usgs.gov/10m/contours\_10\_ft.shp): This shapefile has contour lines on a 10-foot interval, derived from the DEM described above
- ODFW/OWRD Flow restoration priorities (owrd/wabs.shp): These are ODFW Flow Restoration priority areas<sup>19</sup>. Values were assigned to the Water Availability Basin shapefile supplied by the OWRD.

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<sup>17</sup> <http://geopubs.wr.usgs.gov/open-file/of03-67/>

<sup>18</sup> 1/3 arc-second data, <http://ned.usgs.gov/>

<sup>19</sup> <http://nrimp.dfw.state.or.us/nrimp/default.aspx?pn=streamflowmaps>