



1423 Third Avenue, Suite 300  
Seattle, Washington 98101  
Phone 206.287.9130  
Fax 206.287.9131  
www.anchorqea.com

## MEMORANDUM

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**To:** Todd Black, City of Renton  
**From:** Ali Wick, Anchor QEA, LLC.  
**Re:** Bird Island Habitat Survey, Gene Coulon Memorial Park, February 26, 2010  
**Date:** April 27, 2010  
**Project:** 100355-01

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Anchor QEA is assisting the City of Renton, Washington, in creating a baseline from which to evaluate potential habitat effects at Gene Coulon Park associated with a plan by the neighboring Southport development to dock mid-sized boats nearby. A shore-based habitat survey was conducted in 2006 (Anchor 2006) and was repeated this year in 2010 to document existing conditions in the park. This technical memorandum summarizes existing site conditions as documented in the baseline survey in 2010 and notes any differences from 2006. The surveys collected information on beach slope, substrate size, aquatic vegetation, visual evidence of scour, and wildlife. Results of the survey in 2010 indicated that there were no appreciable differences in these parameters between the 2006 and 2010 surveys, except for differing water levels and concomitant seasonal differences of vegetation expected for the area.

The below sections summarize the survey methods and then detail conditions at each of the areas surveyed.

### SURVEY METHODS AND RESULTS

The survey was conducted on the morning of February 26, 2010, and weather conditions at the time were overcast with rain increasing during the site visit, similar to the first habitat survey site visit in April 2006. Water depth in Lake Washington as determined by the U.S. Army Corps of Engineers (Corps) Seattle District website showed that lake level was at 21.9 feet (Corps datum) during the 2006 survey, and was at 20.5 feet during the 2010 (thus, the water level in 2010 was lower by 1.4 feet). The Corps regulates the level of Lake Washington on a yearly basis, and these lake levels are consistent with typical levels observed at these times of year.

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The survey transects in 2010 were again located at the Nature Island Bird Sanctuary Feeding Area (Bird Island) at the southwest end of the park. Information for the six transects is shown in Table 1 and on Figures 1 and 2. Methods in 2010 were the same as in 2006; these methods are repeated here from the 2006 memorandum, for clarity:

“Information was collected along transects by attaching one end of the transect to a landmark on shore and extending a measuring tape into the water by wading. Data were collected at 10 foot intervals along the transect to the deepest point wadeable, or to 150 feet along the transect, whichever was greater. Depth information was collected using a stadia rod, slope was measured by stadia rod and clinometer, and bearing was measured with a hand compass.”

The landmark and global positioning system (GPS) location of each transect start point from 2006 were re-located and the transect point was re-occupied. Table 1, below, repeats the transect location information from 2006.

**Table 1**  
**Habitat Monitoring Transect Locations**

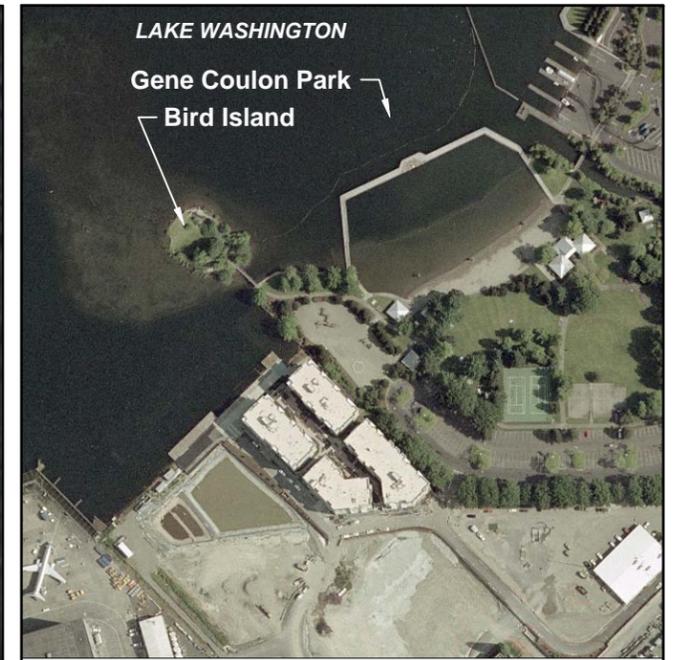
Transect Number	GPS Point at Start of Transect (NAD 83)	Compass Bearing from Start to End of Transect	Landmark (also see Figure 1)
1	N 47.46070 W 120.93594	No transect	Corner of seawall at southwest bridge footing
2	N 47.50438 W 122.20512	164°	Northwest bridge footing on Bird Island side
3	N 47.50441 W 122.20528	174°	Large tree just uphill and northeast of bluff on southwest side of Bird Island
4	N 47.50443 W 122.20549	194°	Large tree on northwest side of marsh on west side of Bird Island
5	N 47.50466 W 122.20552	268°	Large shrub growing in open area on north point of Bird Island
6	N 47.50472* W 122.20527*	360°	Northeast corner of boardwalk footing on northeast side of Bird Island

Notes:

\* Not recorded by DGPS; estimated by aerial photo.

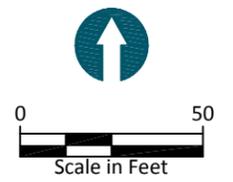
NAD North American Datum

k:\Jobs\100035-City of Renton\100355-01-Gene Coulon\10035501-RP-001.dwg FIG 1  
 Mar 08, 2010 2:39pm cdavidson



**LEGEND:**

-  Transect Start Point (Approximate)
-  Transect Line
-  Water Depth in Feet (Approximate - Measured in Field)



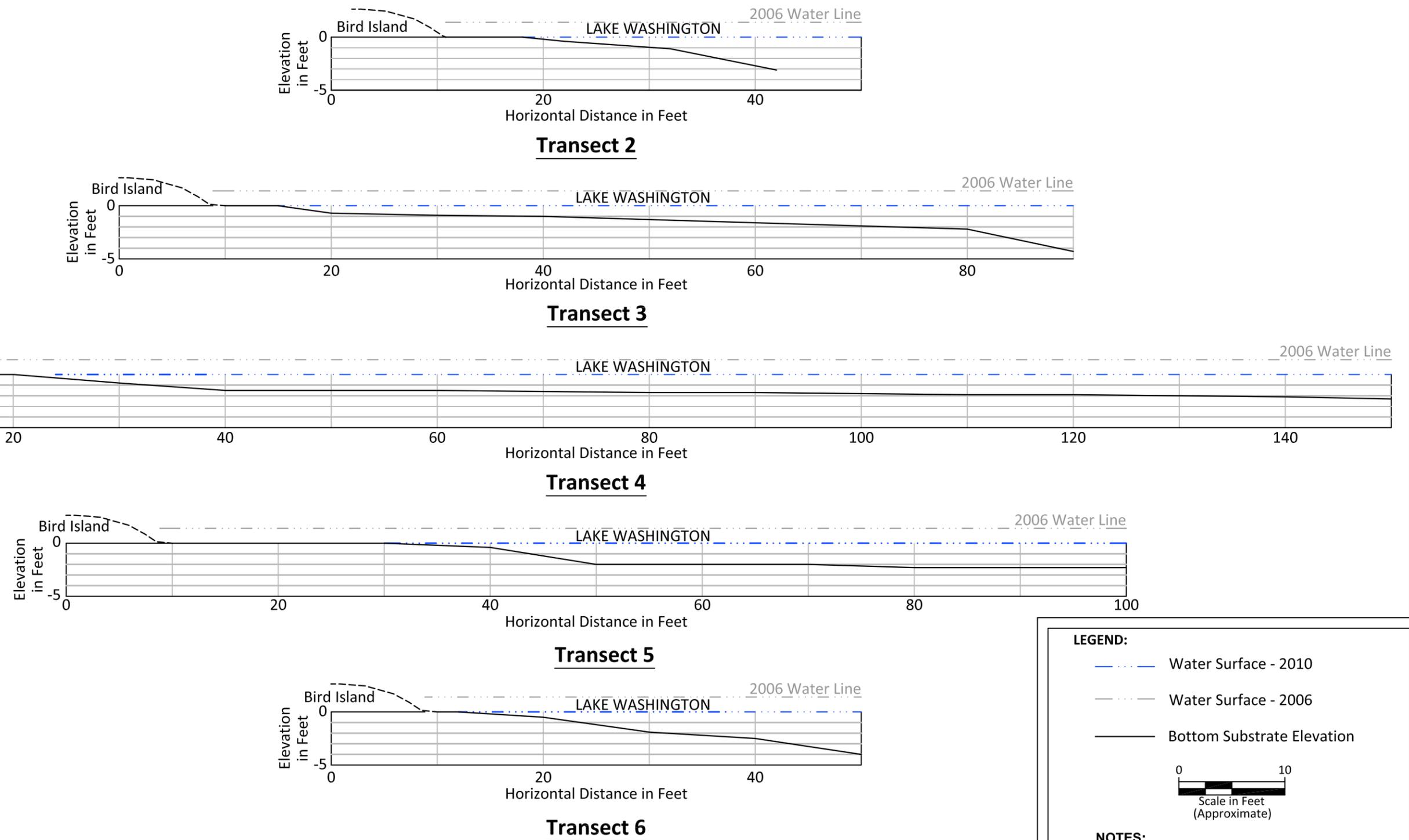
**NOTES:**

1. Water level at time of survey was 21.9 feet (U.S. Army Corps Datum), which is 0.1 feet below highest water level (22 feet).
2. Aerial photo source: WAGDA Washington State Geospatial Data Archive.
3. Water depths as shown have been interpolated between actual transects to create an approximate depth contour for the site.



**Figure 1**  
 Gene Coulon Park Shoreline Habitat Monitoring  
 City of Renton

Mar 08, 2010 2:37pm cdavidson K:\Jobs\100035-City of Renton\100355-01-Gene Coulon\10035501-RP-001.dwg FIG 2



## Transect 1

As noted in 2006, Transect 1 was different from the other transects in that it was not possible to set a true transect because water depth was too great to wade waterward of the seawall, and so the general area was characterized by recording visual and depth observations from a single observation point at the corner of the anchored logs and the seawall (Photos 1a and 1b). Water depth as measured inside the anchored log at the southwest corner of the seawall/bridge was 6.2 feet with a fine (sand) substrate; outside the anchored logs, water depth was 1.1 feet and the substrate was fines (sand) and gravel. These water depths were approximately 1 foot less than in 2006, consistent with the lake level difference as described above, and observations indicate no change in substrate level or type. Upland vegetation was the same, consisting of landscaped plants.



**Photo 1a**  
2006 photo of deep water at observation point at Transect 1, looking southwest



**Photo 1b**  
2010 photo, same area

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## Transect 2

As in 2006, Transect 2 extended from the muddy area at the northwest Bird Island bridge footing out into the littoral zone toward the Southport development (Photos 2a and 2b). Water depths in 2010 ranged from 0 feet at the start of the transect to 3.1 feet at the end of the 42-foot-long transect. Substrate ranged from fines (sand) at the start of the transect to pebbles in the middle, transitioning to fines (muck) at the deepest end of the transect. These depths and substrates are again consistent with the lake level variation from 2006, and observations indicate no change in substrate level or type. The vegetation in 2010 was still the same as in 2006 (reed canary grass and overhanging shrubs), although there was less growth evident in 2010 because the 2010 site visit was slightly earlier in the growing season than the 2006 site visit was (February 2010 versus April 2006). The slope in the transect remained at 6 percent.



**Photo 2a**  
**2006 photo: shallow-water area at northwest Bird Island bridge footing, looking northeast**



**Photo 2b**  
**2010 photo, same area**

## Transect 3

As in 2006, Transect 3 extended waterward from a short, highly eroding escarpment bluff on the southwest side of Bird Island (Photo 3a). The short bluff was approximately 5 feet in height from the waterline to the top of the bank, which is the same height as it was in 2006

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(Photos 3b and 3c). Water depths in 2010 ranged from 0 feet to 4.3 feet at the end of the 90-foot-long transect, and substrate again ranged from fines (muck) at the end of the transect to gravel, pebble, and cobble in the middle, to sand at the shoreline. These depths are again consistent with the lake level variation from 2006, and no differences were observed in substrate and vegetation conditions between 2006 and 2010. Vegetation in 2010 was still the same as it was in 2006 (Photos 3a and 3d). The slope in the transect remained at 7 percent.



**Photo 3a**  
2006 photo: short bluffs at shore of southwest Bird Island, looking west; red dot indicates same location in all four photos (Note: water level is lower in 2010)



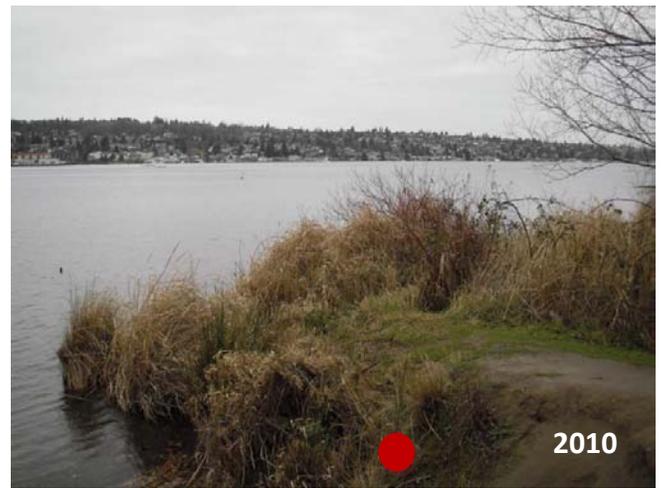
**Photo 3b**  
2006 photo: active erosion at shore of southwest Bird Island (with 4-foot-long stadia rod for scale); red dot indicates same location in all four photos

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**Photo 3c**

**2010 photo: short bluffs at shore of southwest Bird Island, looking west; red dot indicates same location in all four photos**



**Photo 3d**

**2010 photo: short bluffs at shore of southwest Bird Island, looking west; red dot indicates same location in all four photos**

#### **Transect 4**

As in 2006, Transect 4 extended waterward from a freshwater marsh into the lake (Photos 4a and 4b). Water depths in 2010 ranged from 0 to 2.3 feet at the end of this 150-foot-long transect, and substrate was mostly fines (muck) throughout the transect, with pebble near the shore. These depths are again consistent with the lake level variation from 2006, and no differences were observed between substrate and vegetation conditions in 2006 and 2010. The slope in the transect remained at 1 percent.



**Photo 4a**  
**2006 photo: freshwater marsh at northwest side of Bird Island, looking west; blue dot indicates same location in both photos**



**Photo 4b**  
**2010 photo, same area; blue dot indicates same location in both photos**

## **Transect 5**

As in 2006, Transect 5 extended waterward from the northwest shore of Bird Island into the lake. Water depths in 2010 ranged from 0 feet to 2.3 feet at the end of this 100-foot-long transect. As in 2006, the substrate was characterized by fines (sand/silt) at the deep end of the transect, ranging to cobble, pebble, and concrete rubble near the shore. In 2010 as in 2006, the entire north shore of Bird Island was actively eroding and had scattered concrete rubble and angular rock (riprap) armoring that increased toward the east (Photos 5a and 5b). Vegetation is essentially absent aside from lawn grass and two shrubs. Based on observations, photos, and measurements of small bluffs present, conditions in these areas in 2010 were not significantly altered from conditions in 2006. The slope in the transect remained at 4 percent.



**Photo 5a**  
**2006 photo: northwest tip of Bird Island, looking southwest; yellow dot indicates same location in both photos (Note: water level was higher in 2006, and thus more of eroded area is visible in 2010 photo; also, photo angles are slightly different in the two photos)**



**Photo 5b**  
**2010 photo: armoring and shoreline at north east tip of Bird Island, looking northwest; yellow dot indicates same location in both photos**

## **Transect 6**

As in 2006, Transect 6 extended waterward from the northeast tip of the boardwalk footing, eastward into the lake (Figures 6a and 6b). Water depths in 2010 ranged from 0 feet to 4 feet at the end of this 50-foot-long transect. As in 2006, the substrate was characterized by fines (muck) at the deep end of the transect, ranging to cobble, pebble, and armoring rubble at the shore. The slope in the transect remained at 5 percent. The water depth was slightly less in 2010 at the end of the transect than in 2006 (approximately 1 foot), but based on on-site observations, this apparent difference can be attributed to a slight difference in observer stance in the mud substrate than to a real difference in water level.

Over all transects, similar wildlife was observed as that noted in 2006. Red-winged blackbirds and gulls were the birds that were observed in 2010.



**Photo 6a**  
**2006 photo: Concrete rubble, angular rock, and undercut banks at northeast tip of Bird Island, looking northeast**



**Photo 6b**  
**2010 photo, same area**

## **Conclusions**

The above survey results from 2010 show that there were no appreciable differences in any of the park characteristics surveyed (beach slope, substrate size, aquatic vegetation, visual evidence of scour) between the 2006 and 2010 field efforts. As noted above, there were slightly different water levels between the two years; these are attributed to seasonal lake elevations maintained in Lake Washington on the dates at which the surveys occurred. The minor differences in vegetation observed between the two survey years would be expected for the area based on seasonal variation in the area.

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## **REFERENCES**

Anchor Environmental, L.L.C. (Anchor). 2006. Technical Memorandum to City of Renton  
Re: Gene Coulon Park Shoreline Habitat Monitoring – Baseline Survey. May 24,  
2006.

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