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REVISED STUDY OF THE SURFACE CHANGE IN THE NORTHEAST PORTION OF OWENS LAKE DUE TO WIND EROSION

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Notes on Revised Report – *The results in this report were revised from a previous version (September 2012) to account for changes in the hourly sand flux values at some of the locations used for the 2009-2012 analysis period. These changes were made to provide consistency with the sand flux data used for the Owens Lake Dust ID model. At the suggestion of reviewers of the first report, the revised results also incorporated wind direction data (collected at 2-m and 4-m heights) from meteorological sites located within the Keeler Dunes. The revisions to the sand flux and wind direction data did not substantially change the locations, directions and amount of surface change found in the previous results.*

SUMMARY

Wind erosion at Owens Lake has caused deflation of the soil surface level in some areas of the lake bed and inflation in other areas, both on and off the lake bed. In areas where the surface has inflated consistently over time sand dunes have formed. Sand flux measurements taken from a gridded network of sites on the northeast portion of the Owens Lake bed and at two sites off the lake bed in the Keeler dune area were used to analyze the movement of sand from one area to another area. These measurements were taken in 2000 and 2001 from lake bed sites most of which were subsequently removed in 2002 when shallow flood dust control measures were implemented in these areas to control dust and to stop the extensive erosion that was taking place. An analysis of the amount of sand moving into and out of each of the 1 square km cells in the gridded sand flux network showed that many of the cells had more sand leaving the cell than entering the cell. Cells that had a net loss of sand were areas where the surface deflated. Similarly there were cells that had more sand coming into the cell than was leaving. Cells that had a net gain of sand, corresponded to areas of sand deposition. Many of these deposition areas corresponded to areas of known sand accumulation, such as the Keeler Dunes. More recent sand flux data collected from July 2009 through June 2012 was used to analyze sand motion from lake

bed sites adjacent to the shallow flood area on the lake bed and to examine sand motion in the Keeler Dune area. This 2009-2012 analysis used data from a network of sand flux monitors that increased coverage on the lake bed and in the Keeler Dunes. Sand motion from these sites also showed that sand was moving from lake bed areas toward areas along the northeast shoreline at Owens Lake. Surface inflation and deflation areas also corresponded to deposition areas where dunes have formed and to areas of erosion where soil loss has been observed.

METHOD

Annual surface change estimates were made using hourly sand flux and wind direction data to determine the annual net sand flux of each of the areas represented by Sensits. The gridded network of sand flux monitors used during the January 2000 through December 2001 period is shown on the map in Figure 1. Each square grid cell is 1 square-kilometer. A second study period from July 2009 through June 2012 used a network of 125 x 125 meter grid cells that were configured to overlay the sand flux monitoring network which was no longer laid out in a uniform grid pattern. As shown in Figure 2, the grid cells are associated with irregular shaped areas where the sand flux in that area is represented by the sand flux measured at the monitor sites.

Sand flux is measured using a combination of a Cox Sand Catcher (a passive sand collection device) collocated with a Sensit (electronic sand flux detection device) to time-resolve the sand mass collected in the Cox Sand Catcher (CSC) to yield sand flux rates over a given period of time (e.g. 5-minutes, hour, etc.). Measurements from both devices are taken at 15 cm above the surface, and as discussed later these measurements are used to estimate the total amount of sand leaving each area.

For this analysis, hourly sand flux and nearby wind data were used to estimate the amount of annual surface deflation in each area represented by a CSC and a Sensit. (See Figures 1 and 2) Because the wind may cause sand to move from north to south during one event and then south to north in another event, it is necessary to determine the net movement of sand from north to south and east to west to estimate how much sand is leaving the area. This is done by using the hourly sand flux measurements and hourly wind direction data to separate the hourly sand flux vectors into X and Y directional components. For the X component, sand moving toward the west has a positive value and sand moving toward the east has a negative value. Likewise for the Y component, sand moving in the south direction has a positive value and sand moving in the north direction has a negative value. The positive and negative directional conventions for the X and Y sand flux components are shown in Figure 3. To determine the annual net sand flux, the hourly X and Y values are summed for all the hours of the year to determine the net north-south and east-west sand flux vectors for each cell. This yields the annual sand flux value for sand that is leaving the cell. The amount of surface change in each cell also depends on the annual amount of sand that is coming into that cell from adjacent cells to the north, east, west and south. If there

is no cell present in any adjacent direction or if the net sand motion in the adjacent cell is away from the cell (e.g. adjacent cell to the north has a net sand motion to the north), then it is assumed that there is zero incoming sand from that direction. The calculations to determine the annual amount of surface change in a cell is explained below.

Step 1: Determine the annual net north-south (SF_{Y15}) and east-west (SF_{X15}) sand flux movement at each cell *j* using the sand flux at 15 cm for each hour *i* (SF_{15i}) [g/cm^2]and the wind direction for each hour θ_i for all hours of the year. [Note that the wind direction θ_i is the direction the wind is coming from and the vectors calculated in Step 3 are for the direction the sand is moving toward.]

For the X vector (west is a positive value and east is a negative value.

Equation 1

$$SF_{x15,j} = \sum SF_{15i,j}\ (sin\ \theta_i)$$

For the Y vector (north is a negative value and south is a positive value.

Equation 2

$$SF_{y15,j} = \sum SF_{15i,j}\ (cos\ \theta_i)$$

Examples of the X and Y components of the hourly sand flux are shown graphically in Figure 4.

Step 2: Determine the resultant net sand flux at 15 cm (SF_{N15}). [This information is useful for evaluating the results and for understanding net sand motion amount, but is not used in the surface change calculation.]

Equation 3

$$SF_{N15,j} = \sqrt{\left(SF_{y15,j}\right)^2 + \left(SF_{x15,j}\right)^2}$$

Step 3: Determine the net direction that sand is moving toward. [This information is useful for evaluating the results and for understanding net sand motion direction, but is not used in the surface change calculation.]

Equation 4

If $SF_{X15} < 0$

$$Net\ Direction = 90 - \left[\tan^{-1}\left(\frac{SF_{y15,j}}{SF_{x15},j}\right)\right]$$

If $SF_{X15} > 0$

$$Net\ Direction = 270 - \left[\tan^{-1}\left(\frac{SF_{y15,j}}{SF_{x15,j}}\right)\right]$$

Step 4: Determine the annual net sand flux change at 15 cm in each cell, ΔSF_{N15} by adding incoming sand from cells to the north, east, west and south and subtracting outgoing sand from the cell being analyzed.

Equation 5

$$\Delta SF_{N15,j} = \overline{SF_{x15}}(west) + \overline{SF_{x15}}(east) + \overline{SF_{y15}}(north) + \overline{SF_{y15}}(south) - \left(\overline{SF_{x15}}(cell\ j) + \overline{SF_{y15}}(cell\ j)\right)$$

If there is no cell present in any adjacent direction, or if the net sand motion in the adjacent cell is away from the cell (e.g. adjacent cell to the north has a net sand motion to the north), then use zero for the cell in that direction.

To aid in determining the direction of sand motion in adjacent cells, the X and Y sand flux values with directional arrows for each area were placed on a map of the gridded cells as shown in Figure 5. Values for incoming and outgoing sand for each cell were taken from this map and used with equation 5 (see values in Appendices A and B). Note that the negative and positive values for the X and Y components are used to determine the direction of sand movement, but the absolute values for incoming or outgoing sand from the cells are used in equation 5 to determine the change in sand flux.

Step 5: To estimate the total annual net sand flux change ΔSF_{TN} [g/cm] from the net sand flux change at 15 cm use the relationship between the sand flux measured at 15 cm height and the total saltation flux in a vertical plane of infinite height and 1 cm width as previously determined by Gillette, *et al*. (2004).

Equation 6

$$\Delta SF_{TN,j} = \Delta SF_{N15,j} \times 41.7$$

Step 6: Estimate the average depth of surface change across each area, SC_j using the following:

Equation 7

$$SC_j = \frac{\Delta SF_{TN,j}\, W_j}{\rho\, A_j} = \frac{\Delta SF_{TN,j}}{\rho\, W_j}$$

W_j is the width and A_j is the area of the grid cell. Square grid cells were used for both study periods, but the 2000-2001 period had cells 1000 m wide ($W_j = 1\times10^5$ cm), while the 2009-12 period used cells that were 125 m wide ($W_j = 1.25\times10^4$ cm). Since the area is the width squared, the second equation is simplified to drop the area term. The bulk soil density, ρ, is 1.6 g/cm^3 for sand at Owens Lake.

RESULTS AND DISCUSSION

The results of the surface change calculations are provided graphically on maps in Figures 6 through 13 and in tabular form in Appendices A and B. Appendix A contains the calculated results for the 2000-2001 study period and Appendix B contains the results for the 2009-2012 study period.

Figures 6 through 13 illustrate the results on color-shaded contour maps for each of the two study periods. The contour lines and color shading are coded such that the areas that have a net gain (deposition) are colored in shades of blue while the areas that have a net loss of material (erosion) are shaded in yellow to red. The green colored areas indicate little net erosion or deposition. The magnitude and direction of overall sand motion for the times period is shown by the length and orientation of the bold black arrows, respectively.

Figures 9 through 13 show maps of the surface changes estimated for the period from July 2009 through June 2012. They are separated into the dust years that are used for the Owens Lake Dust ID Program, which start on July 1 of each year and end on June 30 of the following year. Surface elevation changes ranged from deflation of 12.04 cm per year to inflation of 5.98 cm per year. It should be noted that the surface changes are for smaller areas than the square kilometer grids used for the 2000 and 2001 study periods so there is a larger range of values. Overall the study area was deflating at a rate of 0.12 cm per year, which is close to 0.10 cm per year deflation rate that was estimated for the 2000 and 2001 study period. Appendix B summarizes the results for each site for the 2009 through 2012 study period.

2000 to 2001 Surface Change

Figures 6 through 8 show contour color-shaded maps of the surface changes calculated for calendar years 2000 and 2001 and for the average of both years. In the 2000-2001 time period surface elevation changes ranged from deflation of 1.41 cm per year to inflation of 0.97 cm per year. Overall, the study area was losing surface sand at an average rate of 0.10 cm per year.

The general pattern evident in Figures 6 through 8 is one of erosion in the central portions of the north sand sheet and deposition along the east and west edges of the future dust control area (shown as the black outline of the dust control measures). The largest deposition area corresponds to areas along the eastern shoreline of the playa and the southern portion of the

Keeler Dunes. The area of moderate erosion present in the northwestern portion of the Keeler Dunes corresponds to the area indicated in Lancaster (2012) as being stripped of sand starting in the late 1990's.

Interestingly, the area of high deposition on the lake bed in 2000 corresponds to the location of the District's SURF (Shallow Unconfined Recirculated Flood) dust control measure test. This test was conducted from October 1999 to September 2000 and consisted on 320 acres of lateral Shallow Flooding. (Agrarian, 2001) Notice that the distribution of high lake bed erosion is interrupted by the SURF test. The rectangular SURF test area and the location of former dunes that used to be present on the lake bed are shown on Figure 6. Notice that the amount and extent of the deposition in the SURF area is dramatically reduced in 2001 following the end of the project (Figure 7). The former dune created by the mile-long Keeler sand fence test is shown as the long narrow dune on the north side of the SURF test area.

2009 to 2012 Surface Change

Figures 9 through 13 show the contour color-shaded maps of the surface changes estimated for the three year period starting in July 2009 and ending in June 2012. The analysis separated the data into dust years that are used for the Owens Lake Dust ID Program. The dust year starts on July 1 of each year and ends on June 30 of the following year.

Overall, surface elevation changes in the study area ranged from deflation of 12.04 cm per year to inflation of 5.98 cm per year. It should be noted that the surface changes are for smaller areas (125 x 125 m) than the one square-kilometer grids used for the 2000 and 2001 study periods so there is a larger range of values. Overall the study area was deflating at a rate of 0.13 cm per year during the 2009-12 period, which is close to the 0.10 cm per year rate that was estimated for the 2000-01 period.

The erosion and deposition patterns observed in the vicinity of the Keeler Dunes from the analysis are consistent for each of the three dust years (Figures 9-11). The overall pattern observed has the highest erosion along the western portion of the dune area extending from the vicinity of the Northern Dune southeastward along the western edge of the deposit. Sand deposition is seen in the southeastern end of the dunes and in the eastern half of the sand deposit. These patterns are consistent with general observations made on the ground and in Lancaster (2012) and HydroBio (2012) that there has been significant deflation of material on the west and spreading and migration of the active Keeler sand sheet and dunes to the east and southeast, respectively

Overall, during the 2009-2012 study period the surface changes were highest in the Keeler Dunes with less change observed on the lake bed north of the Shallow Flooding dust control area. This observation is evident in each of the three dust years (Figures 9-13) and is particularly

pronounced when looking at the erosion areas. The amount of erosion occurring within the Keeler Dunes was three to four times as that on the lake bed.

Also evident by looking at the individual dust years is that the 2009-2010 year had the highest amounts of surface change loss as evidenced by looking at the magnitude and extent of erosion. The amount and extent of deposition is more variable with some areas having higher deposition in 2009-2010 and others in 2011-2012.

Also of interest on Figures 9 through 11 is the surface changes calculated for the northeast portion of the lake bed north of the Shallow Flooding DCM. The north-south oriented elongate zone of moderate erosion yellow) seen on Figure 9 for 2009-2010 is located between the Moat and Row test conducted by the LADWP on the west and the Shallow Flooding DCM on the east. This pattern suggests that there may have been some overall affect in the sand motion patterns resulting from the test. Once the test area was removed in mid-2010 the surface change pattern changes such that the Moat and Row area eroded in 2010-2011 (Figure 10). Near this same area, southeast of Site 9715, sand has been observed to be accumulating around the berms on the north side of the shallow flood DCM. This agrees with the sand motion results for this area in Figure 13.

SUMMARY

The results of the extensive calculations made using the sand motion monitoring data from the two study periods show distinct patterns of erosion and deposition across the northeastern portions of the lake bed and in the adjacent Keeler Dunes. These patterns were evaluated with respect to on-the-ground observations and with respect to dust control measure research activities. In both cases, the patterns in the data correspond well to those observed in the field and to the timing of lake bed research projects. Due to the gridded nature of the cells and the spatial scale used in the analysis, the resulting calculations do not provide an exact match of features on the ground but when interpreted with feature locations provide strong support for the observed patterns. These patterns provide additional confirmation that, since 2000, material is moving southeastward off the northeast portion of the Owens Lake bed and up onto the alluvial fan in the area of the Keeler dunes. In addition, within the dune field itself, the sand is also moving toward the southeast.

The methodology applied here to sand motion monitoring data is a useful tool in the evaluation of surface changes caused by erosion and deposition of sand across an active emissive area. Employing this methodology can provide valuable insight into the spatial and temporal relationships of sand movement over a broad scale.

REFERENCES

Agrarian, 2001. *Shallow Unconfined Recirculated Flooding (SURF) Project Owens Lake, California.* Report prepared for the Great Basin Unified Air Pollution Control District by Agrarian Research and Management Company, Bishop, California, May 2001.

Gillette, *et al.*, 2004. Gillette, Dale, Duane Ono, Ken Richmond, *A Combined Modeling and Measurement Technique for Estimating Wind-Blown Dust Emissions at Owens (dry) Lake, CA*, Journal of Geophysical Research, Volume 109, January 17, 2004.

HydroBio 2012. *Assessment of Dune Movement near Keeler, California*. Report prepared for the Great Basin Unified Air Pollution Control District by HydroBio ARS, Santa Fe, New Mexico. April 13, 2012

Lancaster, 2012, Nicholas L., 2012. *Development of the Keeler Dunefield, Inyo County, California, Part 1 – Analysis of Aerial Photographs and Satellite Images*. Report to the Great Basin Unified Air Pollution Control District, March 2012.

FIGURES

Figure 1. Map showing the kilometer grid and sand motion monitoring sites used in 2000-2001 analysis. Sand motion monitoring sites are labeled by Sensit site number. The dust control areas shown on the map are for reference and were not implemented during the 2000-2001 study period.

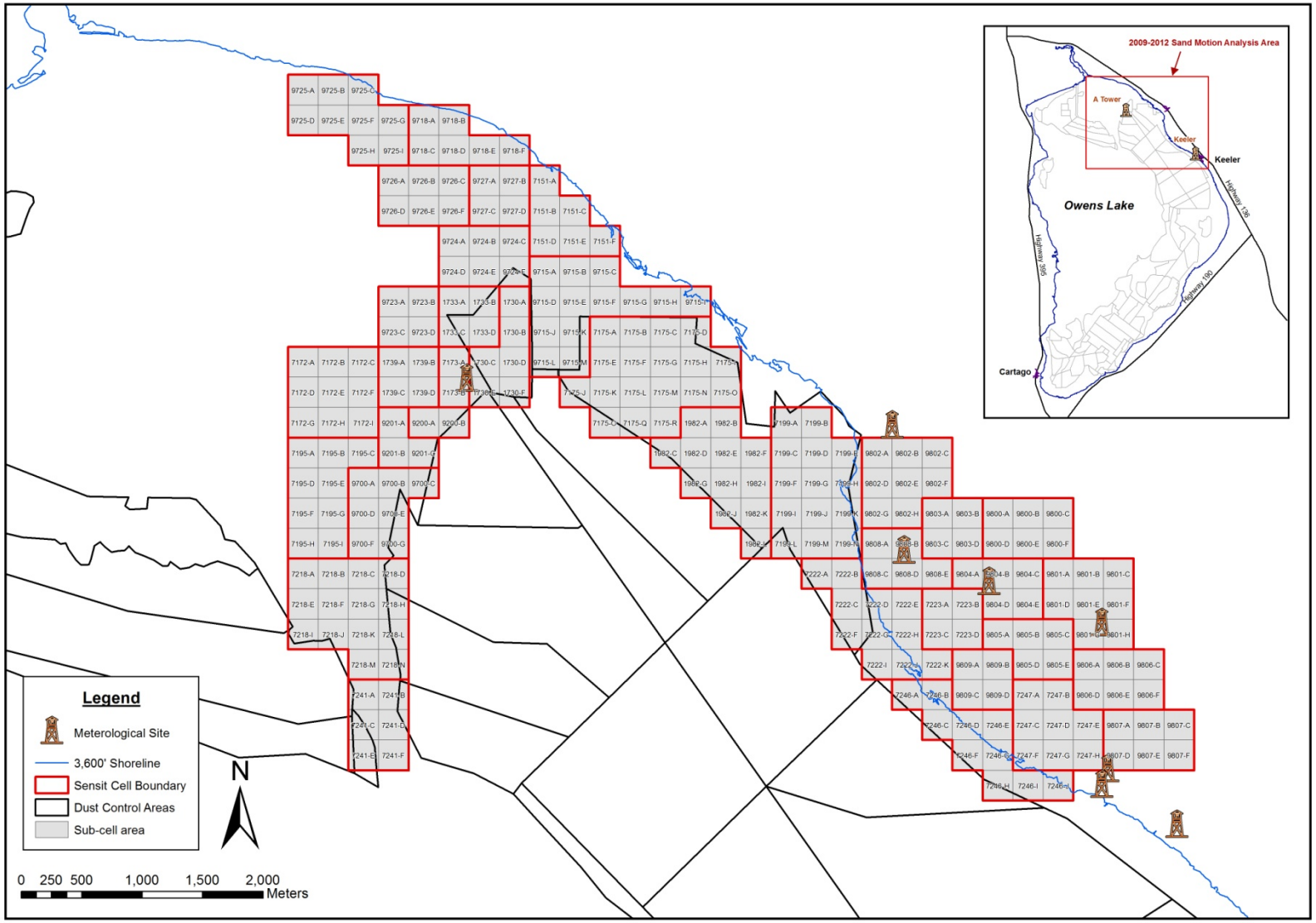

Figure 2. Map showing irregular grid pattern used in the sand motion monitoring for 2009-2012. The bold red outlined areas show the areas designated for the sand motion monitoring sites. Each inner grid cell used in the analysis is 125 x 125 m. Hourly sand flux directions were based on wind directions measured at the closest available met site to the sand flux location.

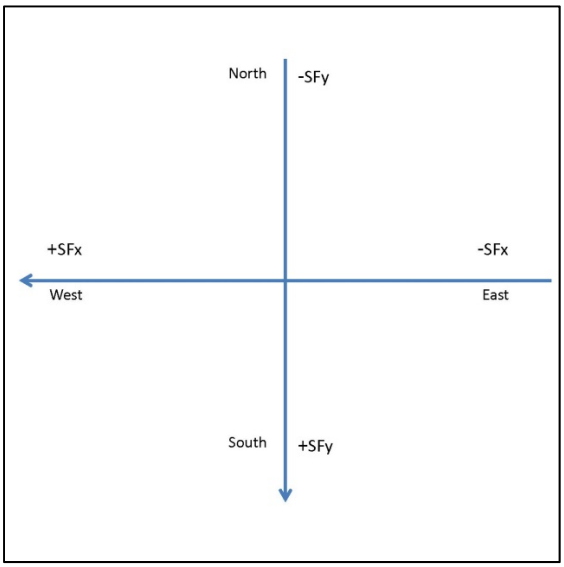

Figure 3. The X and Y components of the sand flux vectors for each hour and year were calculated. A positive value for the X component indicates sand motion toward the west and a positive value for the Y component indicates sand motion toward the south. Likewise, negative values for X and Y indicate sand motion toward the east and north, respectively.

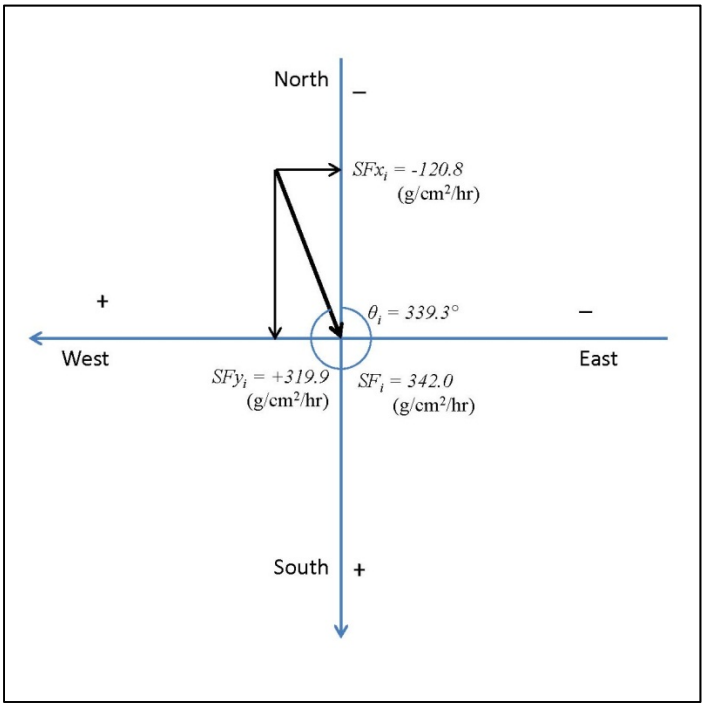

Figure 4. This shows how the hourly sand flux, SF_i is separated into X and Y components using the hourly wind direction, θ_i. Note that the wind direction is the direction that wind is coming from, while the negative or positive signs for the X and Y sand flux components indicate the direction that sand is going toward.

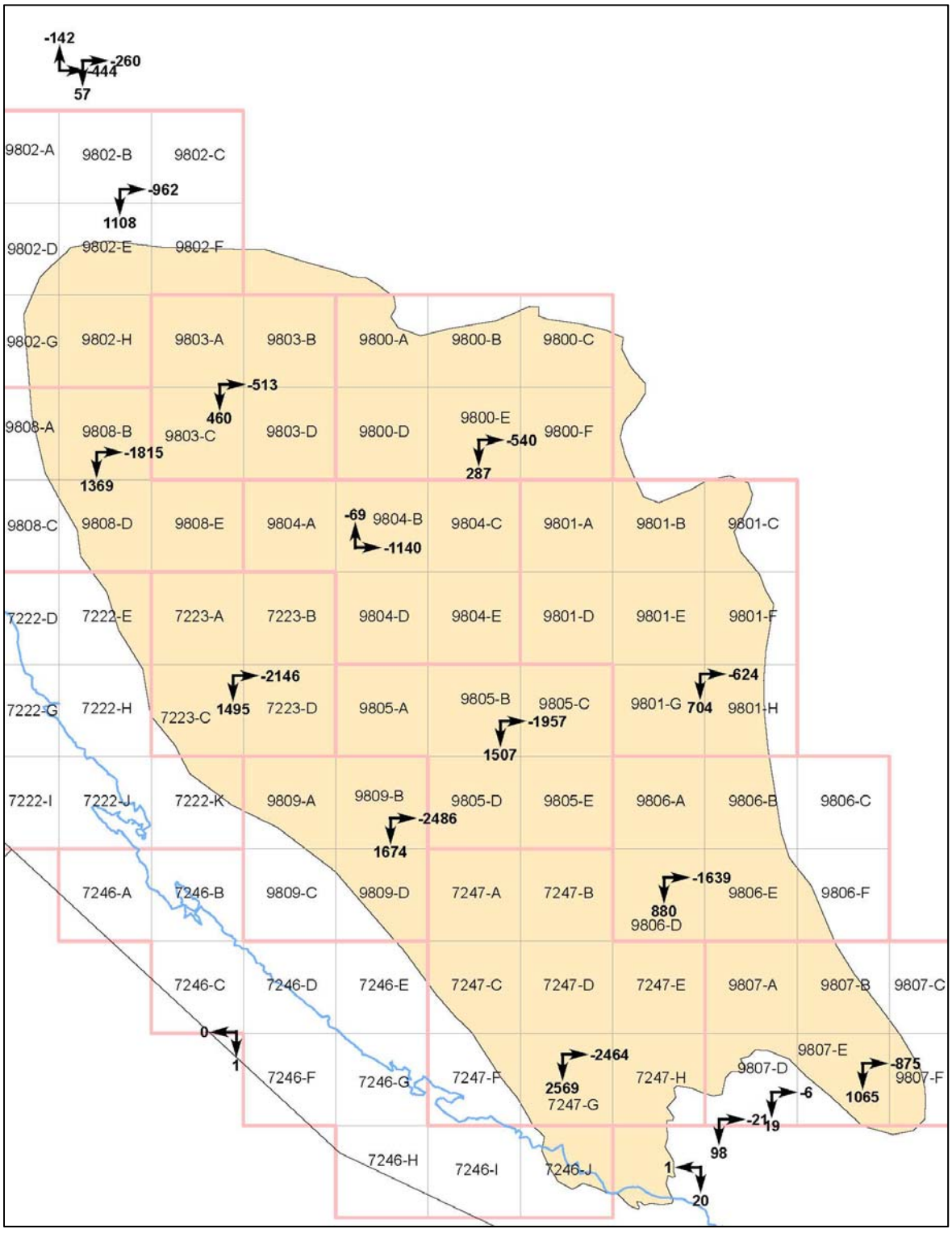

Figure 5. The X and Y components of the annual net sand flux vector were used to estimate the amount of incoming and outgoing sand from each cell. This is an example of the values from the Keeler Dunes area during the 2011-12 dust year. Values for all sites and cells are listed in Appendices A and B. Maps of all the areas are available in an electronic pdf format.

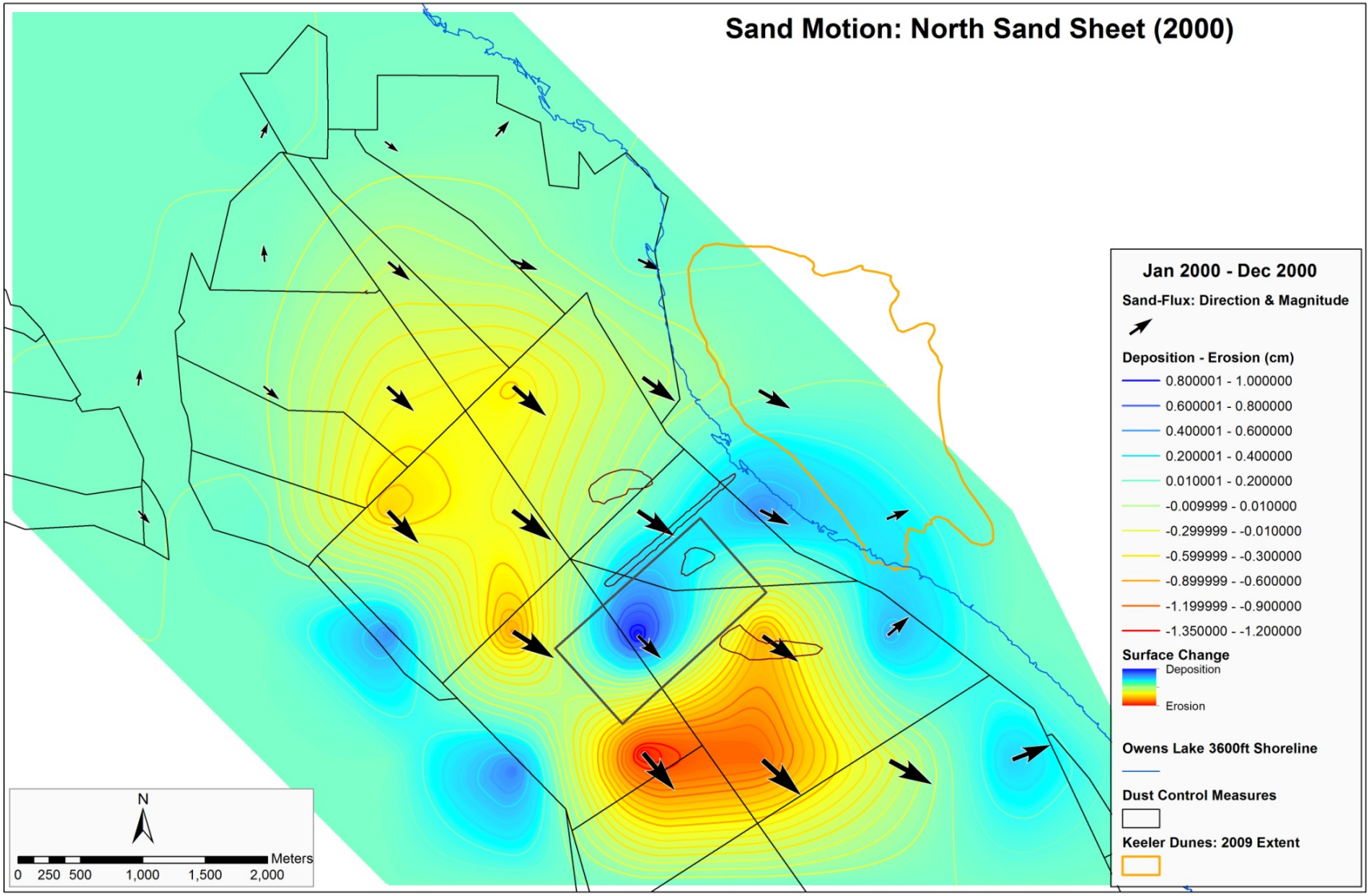

Figure 6. Surface change on the northeastern portion of Owens Lake from January 2000 to December 2000. The location of the dunes on the lake bed and the outline of the extent of the Keeler Dune deposit are shown as is the location of the District's former SURF (shown as the rectangle in the center of the map) dust mitigation research project.

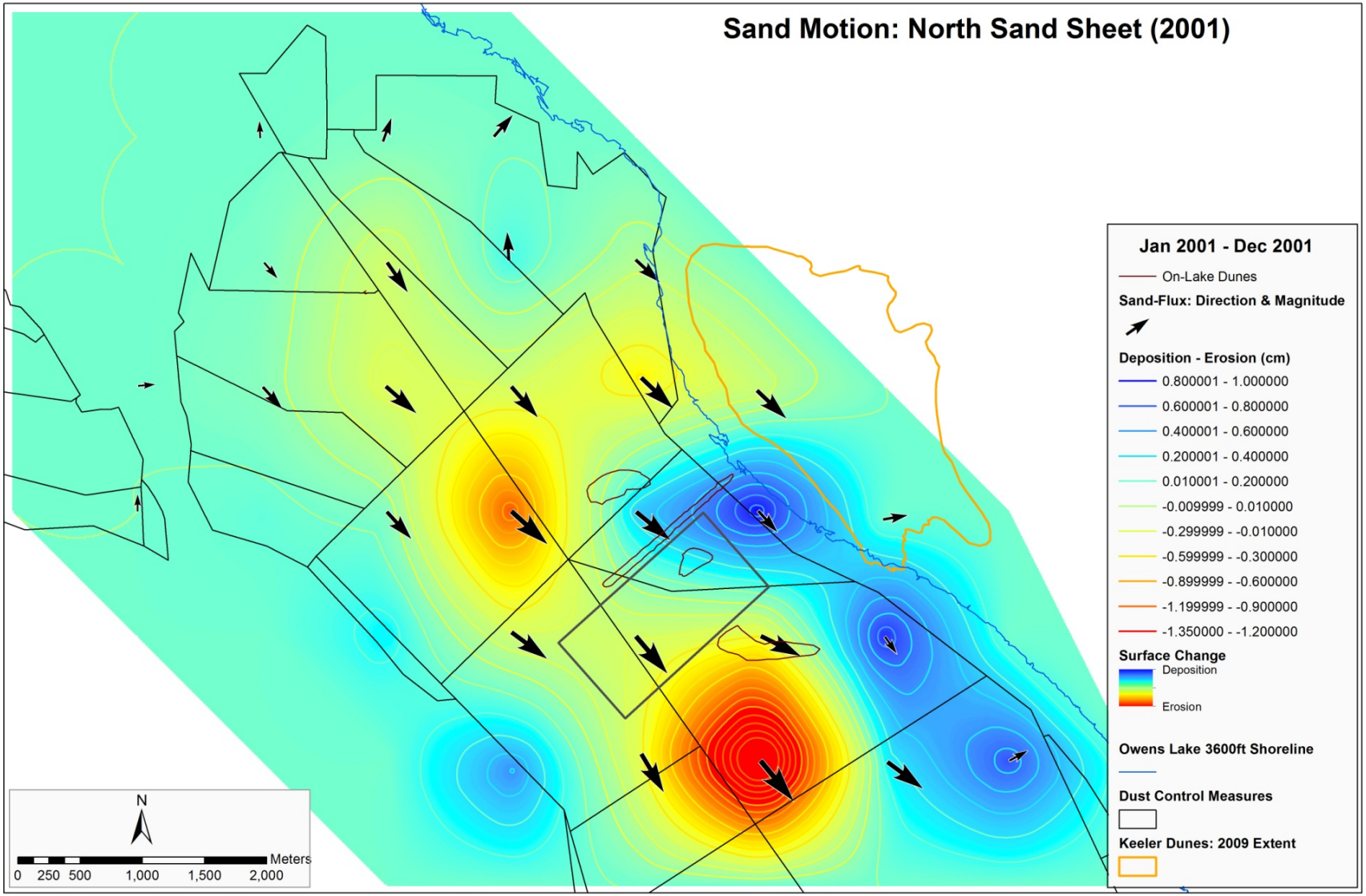

Figure 7. Surface change on the northeastern portion of Owens Lake from January 2001 to December 2001. The location of the dunes on the lake bed and the outline of the extent of the Keeler Dune deposit are shown as is the location of the District's former SURF (shown as the rectangle in the center of the map) dust mitigation research project.

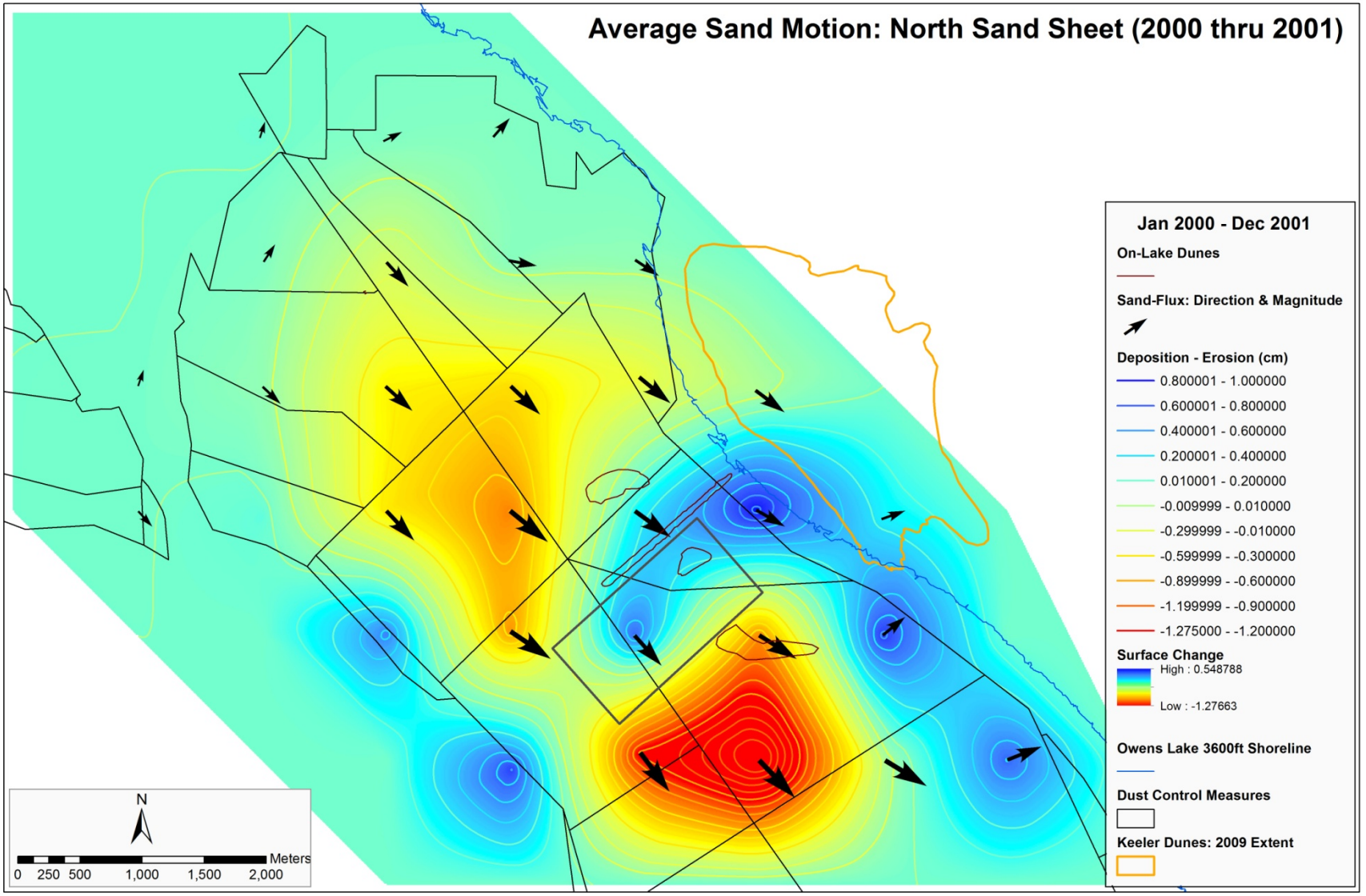

Figure 8 Average surface change on the northeastern portion of Owens Lake from January 2000 to December 2001. The location of the dunes on the lake bed and the outline of the extent of the Keeler Dune deposit are shown as is the location of the District's SURF (shown as the rectangle in the center of the map) dust mitigation research project.

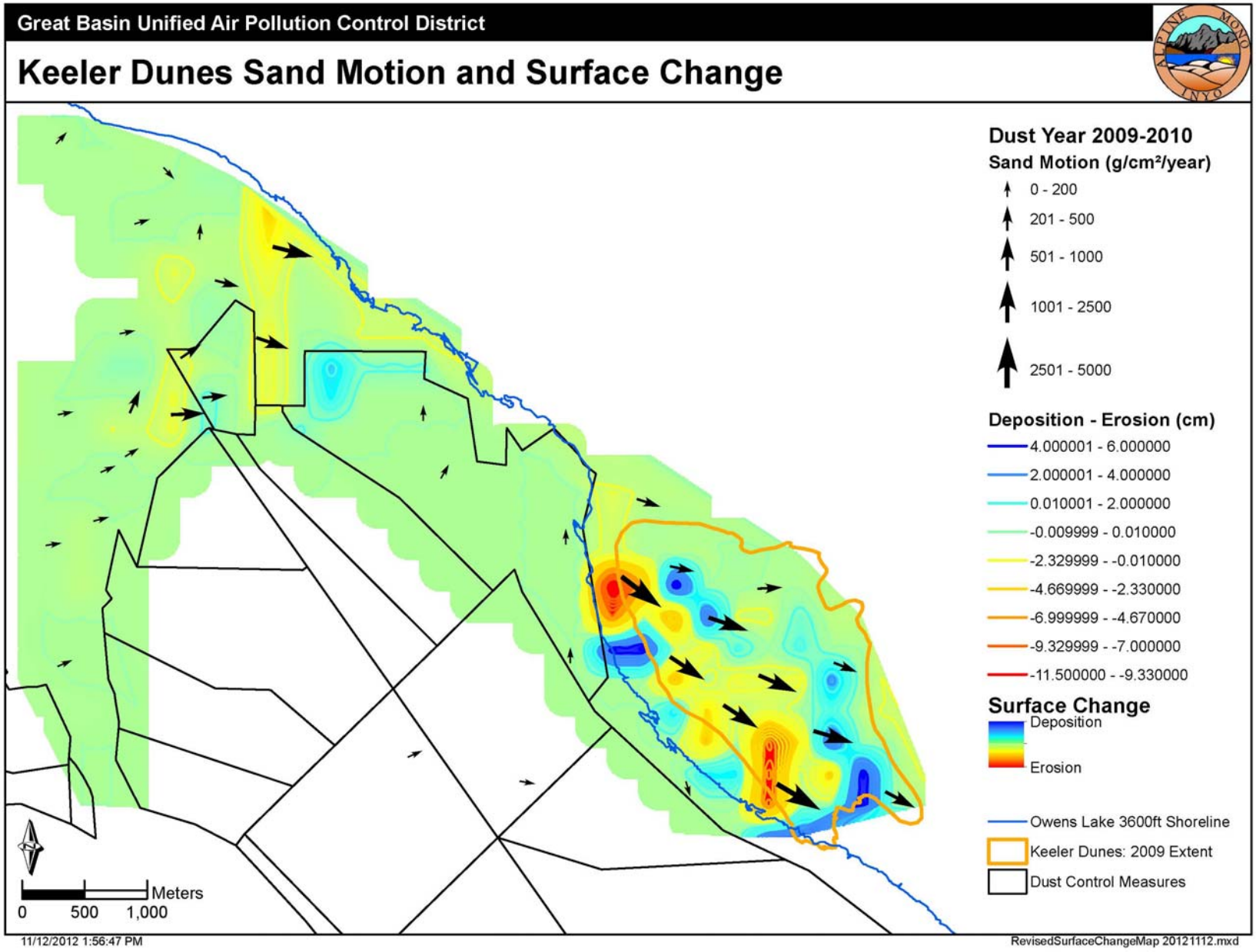

Figure 9. **S**urface change on the northeastern portion of Owens Lake from July 2009 to June 2010.

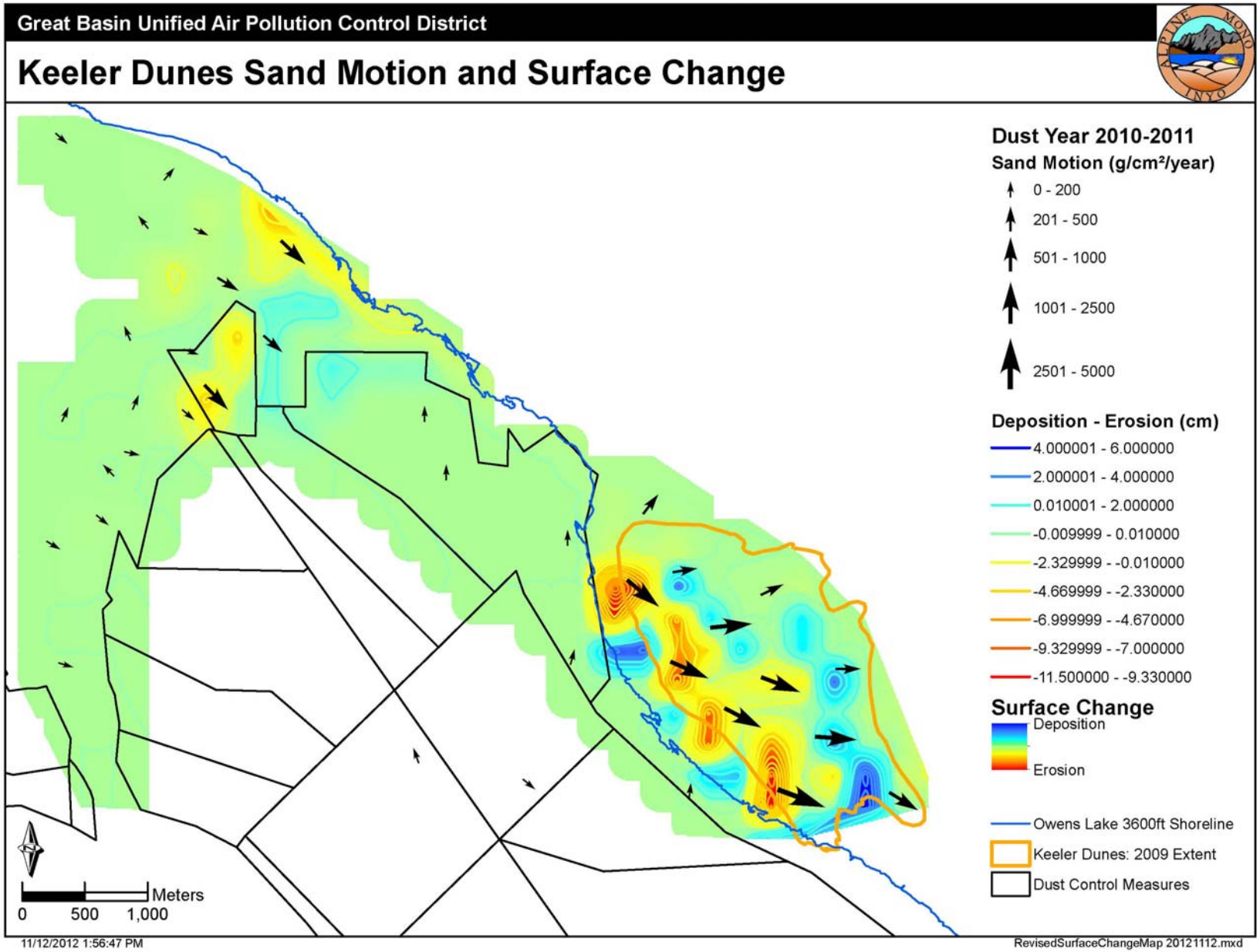

Figure 10. **S**urface change on the northeastern portion of Owens Lake and Keeler Dunes from July 2010 to June 2011.

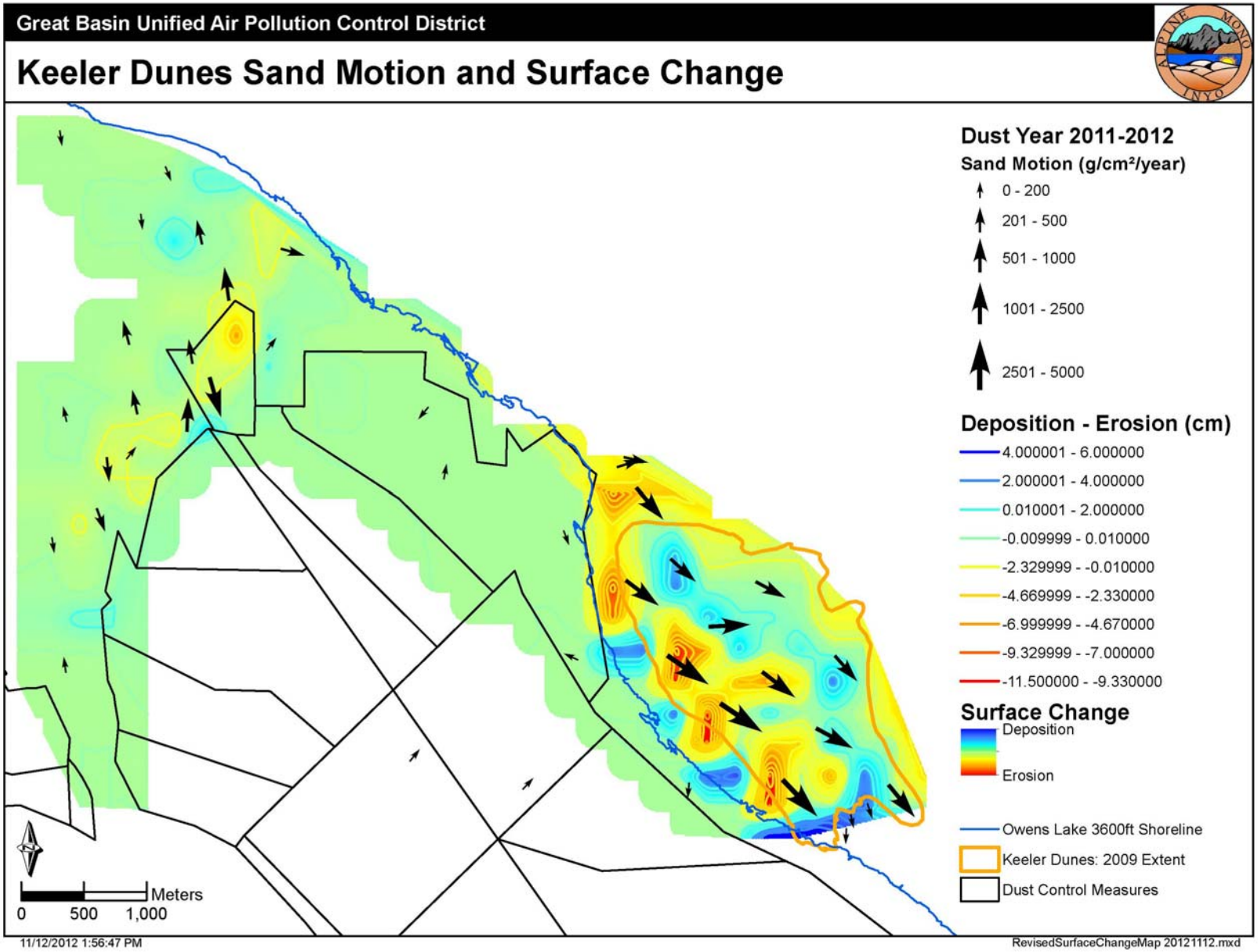

Figure 11. **S**urface change on the northeastern portion of Owens Lake and Keeler Dunes from July 2011 to June 2012.

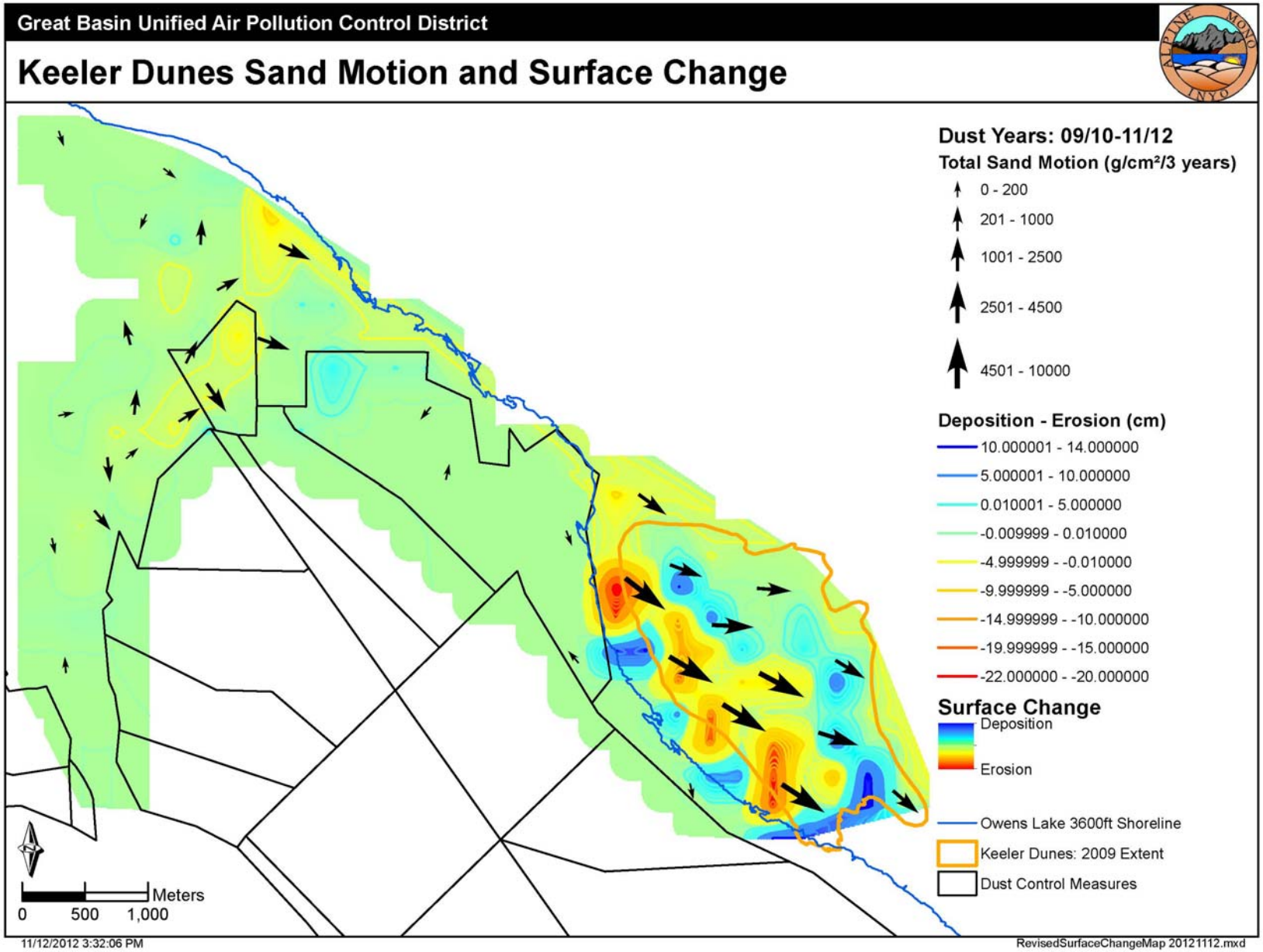

Figure 12. Total amount of surface change on the northeastern portion of Owens Lake and Keeler Dunes from July 2009 to June 2012.

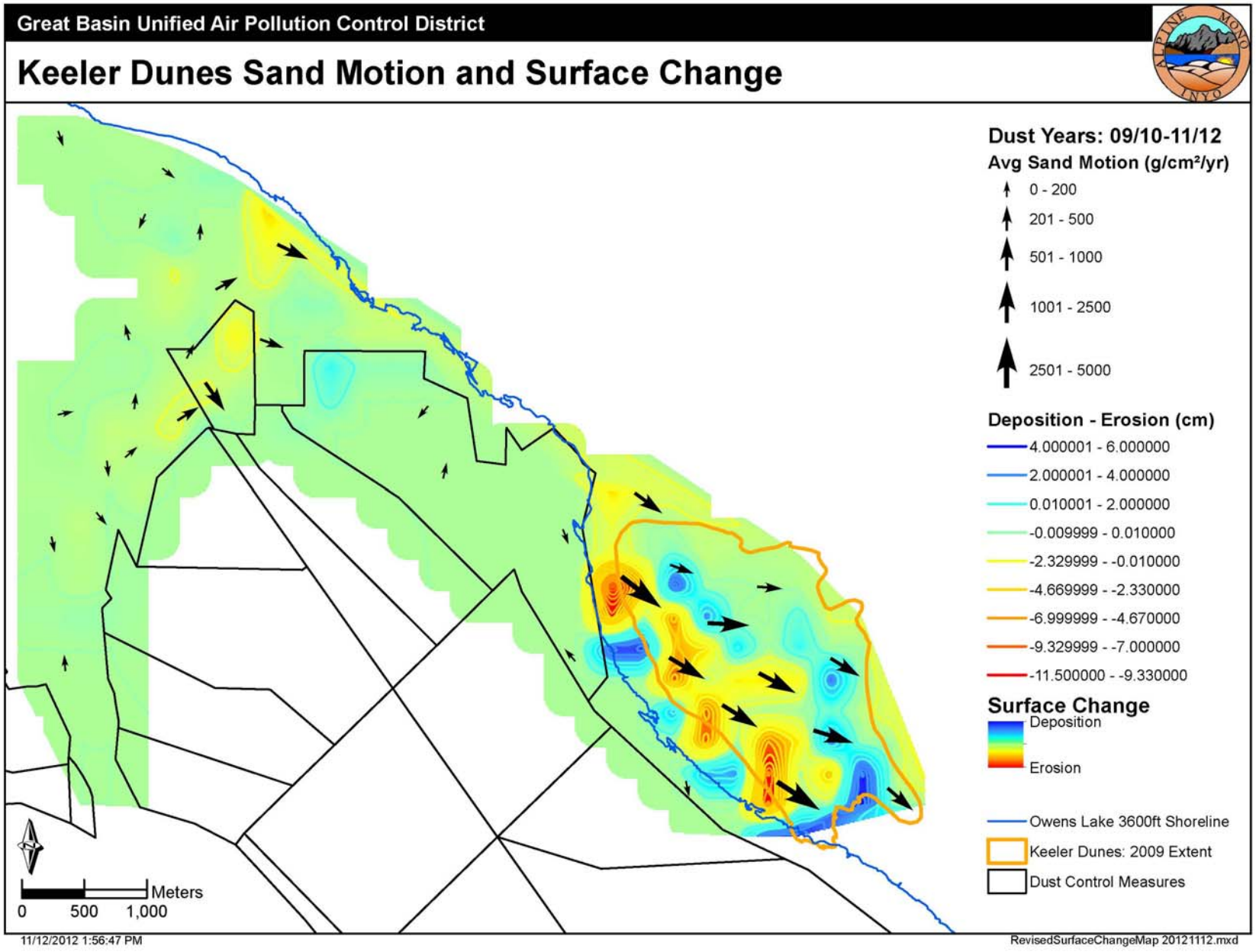

Figure 13. Average surface change on the northeastern portion of Owens Lake and Keeler Dunes from July 2009 to June 2012.

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APPENDIX A

SAND MOTION SUMMARY

2000 – 2001

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APPENDIX A Sand Motion Summary (2000-2001)

	Annual Net Sand Motion				Annual Flux Difference Calculations						2000
Site	2000 SFx ($g/cm^2/yr$)	2000 SFy ($g/cm^2/yr$)	2000 SF (Mag) ($g/cm^2/yr$)	2000 SF Direction (Degrees)	2000 SFx(W)	2000 SFx(E)	2000 SFy(N)	2000 SFy(S)	2000 SFxy (Site)	2000 ΔSF ($g/cm^2/yr$)	Surface Change (cm)
7266					0	0	2053	0	0	2053	0.54
7267	-3591	2314	4272	123	0	0	2389	0	5906	-3517	-0.92
7268	-830	811	1160	134	3591	0	1785	0	1641	3735	0.97
7269	-2705	1941	3329	126	830	0	417	0	4646	-3399	-0.89
7270	-551	-485	734	49	2705	0	0	0	1035	1670	0.44
7290					0	0	2314	0	0	2314	0.60
7172					0	0	0	0	0	0	0.00
7173	-5	-11	12	25	0	0	0	73	16	57	0.01
7174	-43	32	53	127	5	0	0	0	75	-70	-0.02
7175	-88	-101	134	41	43	0	0	0	189	-146	-0.04
7195					0	5	0	14	0	19	0.00
7196	5	-73	73	356	0	0	0	0	78	-78	-0.02
7197					0	0	32	0	0	32	0.01
7197(1001)	-465	389	607	130	0	0	32	0	855	-823	-0.21
7198	-689	238	728	109	465	0	0	0	926	-461	-0.12
7199	-375	180	416	116	689	0	0	0	554	135	0.04
7218	-2	-14	14	7	0	0	0	0	15	-15	0.00
7219	-132	111	172	130	2	0	0	0	242	-240	-0.06
7220	-1226	1124	1664	133	132	0	389	0	2351	-1830	-0.48
7221	-2048	1800	2727	131	1226	0	238	0	3848	-2384	-0.62
7222	-1736	1266	2149	126	2048	0	180	0	3002	-774	-0.20
7223	-1185	677	1365	120	1736	0	0	0	1862	-126	-0.03
7241	-19	20	28	137	0	0	0	0	39	-39	-0.01
7242					19	0	111	0	0	130	0.03
7243	-1967	2053	2843	136	0	0	1124	0	4020	-2896	-0.75
7244	-3170	2389	3970	127	1967	0	1800	0	5560	-1793	-0.47
7245	-2644	1785	3191	124	3170	0	1266	0	4430	6	0.00
7246	-848	417	945	116	2644	0	677	0	1265	2056	0.54
7247	-302	-122	325	68	848	0	0	485	424	909	0.24
7291	-2844	3319	4371	139	0	0	811	0	6163	-5352	-1.39
7292	-4785	4367	6479	132	2844	0	1941	0	9153	-4368	-1.14
7293	-3943	2163	4497	119	4785	0	0	0	6105	-1320	-0.34
7294	-1913	-752	2055	69	3943	0	0	0	2664	1279	0.33

APPENDIX A Sand Motion Summary (2000-2001)

	Annual Net Sand Motion				Annual Flux Difference Calculations						2001
Site	2001 SFx ($g/cm^2/yr$)	2001 SFy ($g/cm^2/yr$)	2001 SF (Mag) ($g/cm^2/yr$)	2001 SF Direction (Degrees)	2001 SFx(W)	2001 SFx(E)	2001 SFy(N)	2001 SFy(S)	2001 SFxy (Site)	2001 ΔSF ($g/cm^2/yr$)	Surface Change (cm)
7266					0	0	437	0	0	437	0.11
7267	-1615	1187	2004	126	0	0	1954	0	2802	-848	-0.22
7268	-1685	1965	2588	139	1615	0	1187	0	3650	-848	-0.22
7269	-1985	977	2212	116	1685	0	129	0	2962	-1148	-0.30
7270	-14	20	24	145	1985	0	0	0	34	1951	0.51
7290					0	0	1187	0	0	1187	0.31
7172					0	0	0	0	0	0	0.00
7173	0	-5	5	357	0	0	0	0	5	-5	0.00
7174	-23	-65	69	19	0	0	0	0	88	-88	-0.02
7175	-86	-99	131	41	23	0	0	115	185	-47	-0.01
7195					0	0	0	0	0	0	0.00
7196	-30	35	46	140	0	0	0	0	65	-65	-0.02
7197	-355	509	621	145	30	7	0	0	864	-827	-0.22
7197(1001)									0	0	0.00
7198	7	-115	115	357	355	0	0	0	122	233	0.06
7199	-254	234	345	133	0	0	0	0	488	-488	-0.13
7218	-3	0	3	85	0	0	0	0	3	-3	0.00
7219	-85	94	126	138	3	0	35	0	179	-141	-0.04
7220	-840	732	1114	131	85	0	509	0	1572	-978	-0.25
7221	-776	891	1181	139	840	0	0	0	1667	-827	-0.22
7222	-1276	1215	1761	134	776	0	234	0	2490	-1480	-0.39
7223	-1047	987	1439	133	1276	0	0	0	2035	-759	-0.20
7241					0	0	0	0	0	0	0.00
7242					0	0	94	0	0	94	0.02
7243	-399	437	592	138	0	0	732	0	836	-104	-0.03
7244	-2170	1954	2920	132	399	0	891	0	4124	-2834	-0.74
7245	-1454	1187	1877	129	2170	0	1215	0	2641	744	0.19
7246	-117	129	174	138	1454	0	987	0	246	2195	0.57
7247	-72	-13	73	80	117	0	0	0	84	33	0.01
7291	-1134	1912	2223	149	0	0	1965	0	3046	-1081	-0.28
7292	-3420	4120	5355	140	1134	0	977	0	7540	-5429	-1.41
7293	-1723	1272	2142	126	3420	0	20	0	2995	445	0.12
7294	-43	-24	49	61	1723	0	0	0	66	1657	0.43

APPENDIX A Sand Motion Summary (2000-2001)

	Average Annual Net Sand Motion				2000-01
Site	2000-01 SFx ($g/cm^2/yr$)	2000-01 SFy ($g/cm^2/yr$)	2000-01 SF (Mag) ($g/cm^2/yr$)	2000-01 SF Direction (Degrees)	Surface Change (cm/yr)
7266					0.32
7267	-2603	1751	3137	124	-0.57
7268	-1258	1388	1873	138	0.38
7269	-2345	1459	2762	122	-0.59
7270	-282	-232	366	51	0.47
7290					0.46
7172					0.00
7173	-2	-8	8	17	0.01
7174	-33	-16	37	63	-0.02
7175	-87	-100	133	41	-0.03
7195					0.00
7196	-12	-19	22	33	-0.02
7197	-355	509	621	145	-0.10
7197(1001)	-465	389	607	130	-0.11
7198	-341	62	346	100	-0.03
7199	-314	207	376	123	-0.05
7218	-2	-7	7	18	0.00
7219	-108	102	149	133	-0.05
7220	-1033	928	1389	132	-0.37
7221	-1412	1346	1950	134	-0.42
7222	-1506	1240	1951	129	-0.29
7223	-1116	832	1392	127	-0.12
7241	-19	20	28	137	-0.01
7242					0.03
7243	-1183	1245	1717	136	-0.39
7244	-2670	2172	3442	129	-0.60
7245	-2049	1486	2531	126	0.10
7246	-482	273	554	120	0.55
7247	-187	-67	199	70	0.12
7291	-1989	2616	3286	143	-0.84
7292	-4103	4244	5903	136	-1.28
7293	-2833	1717	3313	121	-0.11
7294	-978	-388	1052	68	0.38

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APPENDIX B

SAND MOTION SUMMARY

2009 – 2012

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		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
1730	A	-257.73	-28.05	259.25	83.79	261	0	102	28	286	105	0.22
1730	B	-257.73	-28.05	259.25	83.79	261	0	0	28	286	3	0.01
1730	C	-257.73	-28.05	259.25	83.79	629	0	0	28	286	371	0.77
1730	D	-257.73	-28.05	259.25	83.79	258	0	0	28	286	0	0.00
1730	E	-257.73	-28.05	259.25	83.79	629	0	0	0	286	343	0.72
1730	F	-257.73	-28.05	259.25	83.79	258	0	0	0	286	-28	-0.06
1733	A	-261.45	-177.51	316.02	55.83	1	0	102	178	439	-158	-0.33
1733	B	-261.45	-177.51	316.02	55.83	261	0	102	178	439	102	0.21
1733	C	-261.45	-177.51	316.02	55.83	1	0	0	28	439	-410	-0.85
1733	D	-261.45	-177.51	316.02	55.83	261	0	0	28	439	-150	-0.31
1739	A	-98.94	-224.92	245.72	23.74	73	0	0	225	324	-26	-0.05
1739	B	-98.94	-224.92	245.72	23.74	99	0	0	225	324	0	0.00
1739	C	-98.94	-224.92	245.72	23.74	73	0	0	1	324	-250	-0.52
1739	D	-98.94	-224.92	245.72	23.74	99	0	0	18	324	-207	-0.43
1982	A	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	B	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	C	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	D	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	E	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	F	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	G	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	H	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	I	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	J	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	K	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
1982	L	-0.03	-0.05	0.06	29.50	0	0	0	0	0	0	0.00
7151	A	-1056.84	259.95	1088.34	103.82	8	0	0	0	1317	-1309	-2.73
7151	B	-1056.84	259.95	1088.34	103.82	8	0	260	0	1317	-1049	-2.19

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
7151	C	-1056.84	259.95	1088.34	103.82	1057	0	0	0	1317	-260	-0.54
7151	D	-1056.84	259.95	1088.34	103.82	397	0	260	0	1317	-660	-1.38
7151	E	-1056.84	259.95	1088.34	103.82	1057	0	260	0	1317	0	0.00
7151	F	-1056.84	259.95	1088.34	103.82	1057	0	0	0	1317	-260	-0.54
7172	A	-73.30	-14.25	74.67	79.00	0	0	0	14	88	-74	-0.15
7172	B	-73.30	-14.25	74.67	79.00	73	0	0	14	88	-1	0.00
7172	C	-73.30	-14.25	74.67	79.00	73	0	0	14	88	-1	0.00
7172	D	-73.30	-14.25	74.67	79.00	0	0	0	14	88	-74	-0.15
7172	E	-73.30	-14.25	74.67	79.00	73	0	0	14	88	-1	0.00
7172	F	-73.30	-14.25	74.67	79.00	73	0	0	14	88	-1	0.00
7172	G	-73.30	-14.25	74.67	79.00	0	0	0	1	88	-87	-0.18
7172	H	-73.30	-14.25	74.67	79.00	73	0	0	1	88	-14	-0.03
7172	I	-73.30	-14.25	74.67	79.00	73	0	0	1	88	-14	-0.03
7173	A	-629.44	-28.47	630.09	87.41	99	0	0	28	658	-531	-1.11
7173	B	-629.44	-28.47	630.09	87.41	99	0	0	18	658	-541	-1.13
7175	A	0.00	0.00	0.00		848	0	286	0	0	1134	2.36
7175	B	0.00	0.00	0.00		0	0	286	0	0	286	0.60
7175	C	0.00	0.00	0.00		0	0	286	0	0	286	0.60
7175	D	0.00	0.00	0.00		0	0	286	0	0	286	0.60
7175	E	0.00	0.00	0.00		848	0	0	0	0	848	1.77
7175	F	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	G	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	H	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	I	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	J	0.00	0.00	0.00		0	0	286	0	0	286	0.60
7175	K	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	L	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	M	0.00	0.00	0.00		0	0	0	0	0	0	0.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
7175	N	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	O	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	P	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	Q	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7175	R	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7195	A	-6.16	-0.93	6.23	81.37	0	0	0	1	7	-6	-0.01
7195	B	-6.16	-0.93	6.23	81.37	6	0	0	1	7	0	0.00
7195	C	-6.16	-0.93	6.23	81.37	6	0	0	32	7	31	0.06
7195	D	-6.16	-0.93	6.23	81.37	0	0	0	1	7	-6	-0.01
7195	E	-6.16	-0.93	6.23	81.37	6	0	0	1	7	0	0.00
7195	F	-6.16	-0.93	6.23	81.37	0	0	0	1	7	-6	-0.01
7195	G	-6.16	-0.93	6.23	81.37	6	0	0	1	7	0	0.00
7195	H	-6.16	-0.93	6.23	81.37	0	0	0	1	7	-6	-0.01
7195	I	-6.16	-0.93	6.23	81.37	6	0	0	1	7	0	0.00
7199	A	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	B	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	C	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	D	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	E	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	F	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	G	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	H	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	I	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	J	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	K	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	L	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	M	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7199	N	0.00	0.00	0.00		0	0	0	0	0	0	0.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
7218	A	-1.80	-0.78	1.96	66.46	0	0	0	1	3	-2	0.00
7218	B	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	C	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	D	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	E	-1.80	-0.78	1.96	66.46	0	0	0	1	3	-2	0.00
7218	F	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	G	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	H	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	I	-1.80	-0.78	1.96	66.46	0	0	0	0	3	-3	-0.01
7218	J	-1.80	-0.78	1.96	66.46	2	0	0	0	3	-1	0.00
7218	K	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	L	-1.80	-0.78	1.96	66.46	2	0	0	1	3	0	0.00
7218	M	-1.80	-0.78	1.96	66.46	0	0	0	0	3	-3	-0.01
7218	N	-1.80	-0.78	1.96	66.46	2	0	0	0	3	-1	0.00
7222	A	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	B	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	C	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	D	0.00	0.00	0.00		0	0	2551	0	0	2551	5.32
7222	E	0.00	0.00	0.00		0	0	2551	0	0	2551	5.32
7222	F	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	G	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	H	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	I	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	J	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7222	K	0.00	0.00	0.00		0	0	1056	0	0	1056	2.20
7223	A	-1605.36	1056.46	1921.79	123.35	0	0	2551	0	2662	-111	-0.23
7223	B	-1605.36	1056.46	1921.79	123.35	1605	0	326	0	2662	-731	-1.52
7223	C	-1605.36	1056.46	1921.79	123.35	0	0	1056	0	2662	-1606	-3.35

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
7223	D	-1605.36	1056.46	1921.79	123.35	1605	0	1056	0	2662	-1	0.00
7241	A	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7241	B	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7241	C	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7241	D	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7241	E	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7241	F	0.00	0.00	0.00		0	0	0	0	0	0	0.00
7246	A	-0.43	1.47	1.53	163.78	0	0	0	0	2	-2	0.00
7246	B	-0.43	1.47	1.53	163.78	0	0	0	0	2	-2	0.00
7246	C	-0.43	1.47	1.53	163.78	0	0	1	0	2	-1	0.00
7246	D	-0.43	1.47	1.53	163.78	0	0	900	0	2	898	1.87
7246	E	-0.43	1.47	1.53	163.78	0	0	900	0	2	898	1.87
7246	F	-0.43	1.47	1.53	163.78	0	0	1	0	2	-1	0.00
7246	G	-0.43	1.47	1.53	163.78	0	0	1	0	2	-1	0.00
7246	H	-0.43	1.47	1.53	163.78	0	0	1	0	2	-1	0.00
7246	I	-0.43	1.47	1.53	163.78	0	0	1828	0	2	1826	3.81
7246	J	-0.43	1.47	1.53	163.78	0	0	1828	0	2	1826	3.81
7247	A	-3103.04	1828.13	3601.51	120.50	1371	0	794		4931	-2766	-5.77
7247	B	-3103.04	1828.13	3601.51	120.50	3103	0	794		4931	-1034	-2.16
7247	C	-3103.04	1828.13	3601.51	120.50	0	0	1828		4931	-3103	-6.47
7247	D	-3103.04	1828.13	3601.51	120.50	3103	0	1828		4931	0	0.00
7247	E	-3103.04	1828.13	3601.51	120.50	3103	0	327		4931	-1501	-3.13
7247	F	-3103.04	1828.13	3601.51	120.50	0	0	1828		4931	-3103	-6.47
7247	G	-3103.04	1828.13	3601.51	120.50	3103	0	1828		4931	0	0.00
7247	H	-3103.04	1828.13	3601.51	120.50	3103	0	1828		4931	0	0.00
9200	A	-28.98	-18.16	34.20	57.93	3	0	0	1	47	-43	-0.09
9200	B	-28.98	-18.16	34.20	57.93	29	0	0	0	47	-18	-0.04
9201	A	-2.89	-1.28	3.16	66.15	73	0	0	1	4	70	0.15

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
9201	B	-2.89	-1.28	3.16	66.15	6	0	0	32	4	34	0.07
9201	C	-2.89	-1.28	3.16	66.15	3	0	0	32	4	31	0.06
9700	A	-120.89	-32.35	125.14	75.02	6	0	0	32	153	-115	-0.24
9700	B	-120.89	-32.35	125.14	75.02	121	0	0	32	153	0	0.00
9700	C	-120.89	-32.35	125.14	75.02	121	0	0	0	153	-32	-0.07
9700	D	-120.89	-32.35	125.14	75.02	6	0	0	32	153	-115	-0.24
9700	E	-120.89	-32.35	125.14	75.02	121	0	0	32	153	0	0.00
9700	F	-120.89	-32.35	125.14	75.02	6	0	0	1	153	-146	-0.30
9700	G	-120.89	-32.35	125.14	75.02	121	0	0	1	153	-31	-0.07
9715	A	-847.94	285.88	894.83	108.63	397	0	260	0	1134	-477	-0.99
9715	B	-847.94	285.88	894.83	108.63	848	0	260	0	1134	-26	-0.05
9715	C	-847.94	285.88	894.83	108.63	848	0	260	0	1134	-26	-0.05
9715	D	-847.94	285.88	894.83	108.63	258	0	286	0	1134	-590	-1.23
9715	E	-847.94	285.88	894.83	108.63	848	0	286	0	1134	0	0.00
9715	F	-847.94	285.88	894.83	108.63	848	0	286	0	1134	0	0.00
9715	G	-847.94	285.88	894.83	108.63	848	0	0	0	1134	-286	-0.60
9715	H	-847.94	285.88	894.83	108.63	848	0	0	0	1134	-286	-0.60
9715	I	-847.94	285.88	894.83	108.63	848	0	0	0	1134	-286	-0.60
9715	J	-847.94	285.88	894.83	108.63	258	0	286	0	1134	-590	-1.23
9715	K	-847.94	285.88	894.83	108.63	848	0	286	0	1134	0	0.00
9715	L	-847.94	285.88	894.83	108.63	258	0	286	0	1134	-590	-1.23
9715	M	-847.94	285.88	894.83	108.63	848	0	286	0	1134	0	0.00
9718	A	-22.53	24.40	33.21	137.28	4	0	0	0	47	-43	-0.09
9718	B	-22.53	24.40	33.21	137.28	23	0	0	0	47	-24	-0.05
9718	C	-22.53	24.40	33.21	137.28	4	0	24	0	47	-19	-0.04
9718	D	-22.53	24.40	33.21	137.28	23	0	24	0	47	0	0.00
9718	E	-22.53	24.40	33.21	137.28	23	0	0	137	47	113	0.24
9718	F	-22.53	24.40	33.21	137.28	23	0	0	137	47	113	0.24

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
9723	A	-0.52	-0.11	0.53	78.03	0	0	0	0	1	-1	0.00
9723	B	-0.52	-0.11	0.53	78.03	1	0	0	0	1	0	0.00
9723	C	-0.52	-0.11	0.53	78.03	0	0	0	225	1	224	0.47
9723	D	-0.52	-0.11	0.53	78.03	1	0	0	225	1	225	0.47
9724	A	-396.57	102.01	409.48	104.43	0	0	0	0	499	-499	-1.04
9724	B	-396.57	102.01	409.48	104.43	397	0	0	0	499	-102	-0.21
9724	C	-396.57	102.01	409.48	104.43	397	0	0	0	499	-102	-0.21
9724	D	-396.57	102.01	409.48	104.43	0	0	102	178	499	-219	-0.46
9724	E	-396.57	102.01	409.48	104.43	397	0	102	178	499	178	0.37
9724	F	-396.57	102.01	409.48	104.43	397	0	102	28	499	28	0.06
9725	A	-4.29	-4.68	6.35	42.51	0	0	0	5	9	-4	-0.01
9725	B	-4.29	-4.68	6.35	42.51	4	0	0	5	9	0	0.00
9725	C	-4.29	-4.68	6.35	42.51	4	0	0	5	9	0	0.00
9725	D	-4.29	-4.68	6.35	42.51	0	0	0	0	9	-9	-0.02
9725	E	-4.29	-4.68	6.35	42.51	4	0	0	0	9	-5	-0.01
9725	F	-4.29	-4.68	6.35	42.51	4	0	0	5	9	0	0.00
9725	G	-4.29	-4.68	6.35	42.51	4	0	0	5	9	0	0.00
9725	H	-4.29	-4.68	6.35	42.51	0	0	0	0	9	-9	-0.02
9725	I	-4.29	-4.68	6.35	42.51	4	0	0	0	9	-5	-0.01
9726	A	-0.04	-0.01	0.04	72.48	0	0	0	0	0	0	0.00
9726	B	-0.04	-0.01	0.04	72.48	0	0	24	0	0	24	0.05
9726	C	-0.04	-0.01	0.04	72.48	0	0	24	0	0	24	0.05
9726	D	-0.04	-0.01	0.04	72.48	0	0	0	0	0	0	0.00
9726	E	-0.04	-0.01	0.04	72.48	0	0	0	0	0	0	0.00
9726	F	-0.04	-0.01	0.04	72.48	0	0	0	0	0	0	0.00
9727	A	-7.94	-137.11	137.34	3.31	0	0	24	137	145	16	0.03
9727	B	-7.94	-137.11	137.34	3.31	8	0	24	137	145	24	0.05
9727	C	-7.94	-137.11	137.34	3.31	0	0	0	0	145	-145	-0.30

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
9727	D	-7.94	-137.11	137.34	3.31	8	0	0	0	145	-137	-0.29
9800	A	-391.80	-23.41	392.50	86.58	471	0	0	23	415	79	0.16
9800	B	-391.80	-23.41	392.50	86.58	392	0	0	23	415	0	0.00
9800	C	-391.80	-23.41	392.50	86.58	392	0	0	23	415	0	0.00
9800	D	-391.80	-23.41	392.50	86.58	471	0	0	0	415	56	0.12
9800	E	-391.80	-23.41	392.50	86.58	392	0	0	0	415	-23	-0.05
9800	F	-391.80	-23.41	392.50	86.58	392	0	0	0	415	-23	-0.05
9801	A	-393.17	155.98	422.98	111.64	986	0	0	0	549	437	0.91
9801	B	-393.17	155.98	422.98	111.64	393	0	0	0	549	-156	-0.33
9801	C	-393.17	155.98	422.98	111.64	393	0	0	0	549	-156	-0.33
9801	D	-393.17	155.98	422.98	111.64	986	0	156	0	549	593	1.24
9801	E	-393.17	155.98	422.98	111.64	393	0	156	0	549	0	0.00
9801	F	-393.17	155.98	422.98	111.64	393	0	156	0	549	0	0.00
9801	G	-393.17	155.98	422.98	111.64	1829	0	156	0	549	1436	2.99
9801	H	-393.17	155.98	422.98	111.64	393	0	156	0	549	0	0.00
9802	A	-375.32	120.41	394.17	107.79	0	0	0	0	496	-496	-1.03
9802	B	-375.32	120.41	394.17	107.79	375	0	0	0	496	-121	-0.25
9802	C	-375.32	120.41	394.17	107.79	375	0	0	0	496	-121	-0.25
9802	D	-375.32	120.41	394.17	107.79	0	0	120	0	496	-376	-0.78
9802	E	-375.32	120.41	394.17	107.79	375	0	120	0	496	-1	0.00
9802	F	-375.32	120.41	394.17	107.79	375	0	120	0	496	-1	0.00
9802	G	-375.32	120.41	394.17	107.79	0	0	120	0	496	-376	-0.78
9802	H	-375.32	120.41	394.17	107.79	375	0	120	0	496	-1	0.00
9803	A	-470.89	96.94	480.77	101.63	375	0	120	0	568	-73	-0.15
9803	B	-470.89	96.94	480.77	101.63	471	0	0	0	568	-97	-0.20
9803	C	-470.89	96.94	480.77	101.63	3341	0	97	0	568	2870	5.98
9803	D	-470.89	96.94	480.77	101.63	471	0	97	0	568	0	0.00
9804	A	-986.22	326.31	1038.80	108.31	3341	0	97	0	1313	2125	4.43

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2009-10 SFx ($g/cm^2/yr$)	2009-10 SFy ($g/cm^2/yr$)	2009-10 SF(Mag)	2009-10 SF(Dir)	2009-10 SFx(W)	2009-10 SFx(E)	2009-10 SFy(N)	2009-10 SFy(S)	2009-10 SFxy (Site)	2009-10 ΔSF	2009-10 Surface Change (cm)
9804	B	-986.22	326.31	1038.80	108.31	986	0	0	0	1313	-327	-0.68
9804	C	-986.22	326.31	1038.80	108.31	986	0	0	0	1313	-327	-0.68
9804	D	-986.22	326.31	1038.80	108.31	1605	0	326	0	1313	618	1.29
9804	E	-986.22	326.31	1038.80	108.31	986	0	326	0	1313	-1	0.00
9805	A	-1829.27	793.74	1994.05	113.46	1605	0	326	0	2623	-692	-1.44
9805	B	-1829.27	793.74	1994.05	113.46	1829	0	326	0	2623	-468	-0.98
9805	C	-1829.27	793.74	1994.05	113.46	1829	0	156	0	2623	-638	-1.33
9805	D	-1829.27	793.74	1994.05	113.46	1371	0	794	0	2623	-458	-0.95
9805	E	-1829.27	793.74	1994.05	113.46	1829	0	794	0	2623	0	0.00
9806	A	-1103.43	326.91	1150.84	106.50	1829	0	156	0	1430	555	1.16
9806	B	-1103.43	326.91	1150.84	106.50	1103	0	156	0	1430	-171	-0.36
9806	C	-1103.43	326.91	1150.84	106.50	1103	0	0	0	1430	-327	-0.68
9806	D	-1103.43	326.91	1150.84	106.50	3103	0	327	0	1430	2000	4.17
9806	E	-1103.43	326.91	1150.84	106.50	1103	0	327	0	1430	0	0.00
9806	F	-1103.43	326.91	1150.84	106.50	1103	0	327	0	1430	0	0.00
9807	A	-555.02	297.43	629.69	118.19	3103	0	327	0	852	2578	5.37
9807	B	-555.02	297.43	629.69	118.19	555	0	327	0	852	30	0.06
9807	C	-555.02	297.43	629.69	118.19	555	0	0	0	852	-297	-0.62
9807	D	-555.02	297.43	629.69	118.19	3103	0	297	0	852	2548	5.31
9807	E	-555.02	297.43	629.69	118.19	555	0	297	0	852	0	0.00
9807	F	-555.02	297.43	629.69	118.19	555	0	297	0	852	0	0.00
9808	A	-3341.32	2551.32	4204.01	127.36	0	0	120	0	5893	-5773	-12.04
9808	B	-3341.32	2551.32	4204.01	127.36	3341	0	120	0	5893	-2432	-5.07
9808	C	-3341.32	2551.32	4204.01	127.36	0	0	2551	0	5893	-3342	-6.97
9808	D	-3341.32	2551.32	4204.01	127.36	3341	0	2551	0	5893	-1	0.00
9808	E	-3341.32	2551.32	4204.01	127.36	3341	0	97	0	5893	-2455	-5.12
9809	A	-1370.83	899.62	1639.66	123.28	0	0	1056	0	2270	-1214	-2.53
9809	B	-1370.83	899.62	1639.66	123.28	1371	0	794	0	2270	-105	-0.22

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	**Cell**	**2009-10 SFx ($g/cm^2/yr$)**	**2009-10 SFy ($g/cm^2/yr$)**	**2009-10 SF(Mag)**	**2009-10 SF(Dir)**	**2009-10 SFx(W)**	**2009-10 SFx(E)**	**2009-10 SFy(N)**	**2009-10 SFy(S)**	**2009-10 SFxy (Site)**	**2009-10 ΔSF**	**2009-10 Surface Change (cm)**
9809	C	-1370.83	899.62	1639.66	123.28	0	0	900	0	2270	-1370	-2.86
9809	D	-1370.83	899.62	1639.66	123.28	1371	0	900	0	2270	1	0.00

Average	-0.12
Max	5.98
Min	-12.04

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
1730	A	-574.22	596.29	828	136	32	0	123	0	1171	-1016	-2.12
1730	B	-574.22	596.29	828	136	32	0	596	0	1171	-543	-1.13
1730	C	-574.22	596.29	828	136	91	0	11	0	1171	-1069	-2.23
1730	D	-574.22	596.29	828	136	574	0	596	0	1171	-1	0.00
1730	E	-574.22	596.29	828	136	91	0	596	0	1171	-484	-1.01
1730	F	-574.22	596.29	828	136	574	0	596	0	1171	-1	0.00
1733	A	-31.65	10.77	33	109	0	0	123	0	42	81	0.17
1733	B	-31.65	10.77	33	109	32	0	123	0	42	113	0.23
1733	C	-31.65	10.77	33	109	0	0	11	0	42	-31	-0.07
1733	D	-31.65	10.77	33	109	32	0	11	0	42	1	0.00
1739	A	-1.63	-3.99	4	22	1	0	0	4	6	-1	0.00
1739	B	-1.63	-3.99	4	22	2	0	0	4	6	0	0.00
1739	C	-1.63	-3.99	4	22	1	0	0	0	6	-5	-0.01
1739	D	-1.63	-3.99	4	22	2	0	0	0	6	-4	-0.01
1982	A	0.00	0.00			0	0	0	0	0	0	0.00
1982	B	0.00	0.00			0	0	0	0	0	0	0.00
1982	C	0.00	0.00			0	0	0	0	0	0	0.00
1982	D	0.00	0.00			0	0	0	0	0	0	0.00
1982	E	0.00	0.00			0	0	0	0	0	0	0.00
1982	F	0.00	0.00			0	0	0	0	0	0	0.00
1982	G	0.00	0.00			0	0	0	0	0	0	0.00
1982	H	0.00	0.00			0	0	0	0	0	0	0.00
1982	I	0.00	0.00			0	0	0	0	0	0	0.00
1982	J	0.00	0.00			0	0	0	0	0	0	0.00
1982	K	0.00	0.00			0	0	0	0	0	0	0.00
1982	L	0.00	0.00			0	0	0	0	0	0	0.00
7151	A	-668.32	639.21	925	134	111	0	0	0	1308	-1197	-2.49
7151	B	-668.32	639.21	925	134	111	0	639	0	1308	-558	-1.16

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
7151	C	-668.32	639.21	925	134	668	0	0	0	1308	-640	-1.33
7151	D	-668.32	639.21	925	134	202	0	639	0	1308	-467	-0.97
7151	E	-668.32	639.21	925	134	668	0	639	0	1308	-1	0.00
7151	F	-668.32	639.21	925	134	668	0	0	0	1308	-640	-1.33
7172	A	-0.53	-1.20	1	24	0	0	0	1	2	-1	0.00
7172	B	-0.53	-1.20	1	24	1	0	0	1	2	0	0.00
7172	C	-0.53	-1.20	1	24	1	0	0	1	2	0	0.00
7172	D	-0.53	-1.20	1	24	0	0	0	1	2	-1	0.00
7172	E	-0.53	-1.20	1	24	1	0	0	1	2	0	0.00
7172	F	-0.53	-1.20	1	24	1	0	0	1	2	0	0.00
7172	G	-0.53	-1.20	1	24	0	0	0	0	2	-2	0.00
7172	H	-0.53	-1.20	1	24	1	0	0	0	2	-1	0.00
7172	I	-0.53	-1.20	1	24	1	0	0	0	2	-1	0.00
7173	A	-91.07	76.35	119	130	2	0	11	0	167	-154	-0.32
7173	B	-91.07	76.35	119	130	2	0	76	0	167	-89	-0.19
7175	A	0.00	0.00			247	0	216	0	0	463	0.97
7175	B	0.00	0.00			0	0	216	0	0	216	0.45
7175	C	0.00	0.00			0	0	216	0	0	216	0.45
7175	D	0.00	0.00			0	0	216	0	0	216	0.45
7175	E	0.00	0.00			247	0	0	0	0	247	0.51
7175	F	0.00	0.00			0	0	0	0	0	0	0.00
7175	G	0.00	0.00			0	0	0	0	0	0	0.00
7175	H	0.00	0.00			0	0	0	0	0	0	0.00
7175	I	0.00	0.00			0	0	0	0	0	0	0.00
7175	J	0.00	0.00			0	0	216	0	0	216	0.45
7175	K	0.00	0.00			0	0	0	0	0	0	0.00
7175	L	0.00	0.00			0	0	0	0	0	0	0.00
7175	M	0.00	0.00			0	0	0	0	0	0	0.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
7175	N	0.00	0.00			0	0	0	0	0	0	0.00
7175	O	0.00	0.00			0	0	0	0	0	0	0.00
7175	P	0.00	0.00			0	0	0	0	0	0	0.00
7175	Q	0.00	0.00			0	0	0	0	0	0	0.00
7175	R	0.00	0.00			0	0	0	0	0	0	0.00
7195	A	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	B	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	C	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	D	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	E	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	F	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	G	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	H	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7195	I	-0.35	0.20	0	120	0	0	0	0	1	-1	0.00
7199	A	0.00	0.00			0	0	0	0	0	0	0.00
7199	B	0.00	0.00			0	0	0	0	0	0	0.00
7199	C	0.00	0.00			0	0	0	0	0	0	0.00
7199	D	0.00	0.00			0	0	0	0	0	0	0.00
7199	E	0.00	0.00			0	0	0	0	0	0	0.00
7199	F	0.00	0.00			0	0	0	0	0	0	0.00
7199	G	0.00	0.00			0	0	0	0	0	0	0.00
7199	H	0.00	0.00			0	0	0	0	0	0	0.00
7199	I	0.00	0.00			0	0	0	0	0	0	0.00
7199	J	0.00	0.00			0	0	0	0	0	0	0.00
7199	K	0.00	0.00			0	0	0	0	0	0	0.00
7199	L	0.00	0.00			0	0	0	0	0	0	0.00
7199	M	0.00	0.00			0	0	0	0	0	0	0.00
7199	N	0.00	0.00			0	0	0	0	0	0	0.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
7218	A	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	B	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	C	-0.09	0.03	0	106	0	0	18	0	0	18	0.04
7218	D	-0.09	0.03	0	106	0	0	18	0	0	18	0.04
7218	E	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	F	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	G	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	H	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	I	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	J	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	K	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	L	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	M	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7218	N	-0.09	0.03	0	106	0	0	0	0	0	0	0.00
7222	A	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	B	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	C	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	D	-0.07	-0.28	0	14	0	0	1570	0	0	1570	3.27
7222	E	-0.07	-0.28	0	14	0	0	1570	0	0	1570	3.27
7222	F	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	G	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	H	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	I	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	J	-0.07	-0.28	0	14	0	0	0	0	0	0	0.00
7222	K	-0.07	-0.28	0	14	0	0	855	0	0	855	1.78
7223	A	-1969.39	855.37	2147	113	0	0	1570	0	2825	-1255	-2.62
7223	B	-1969.39	855.37	2147	113	1969	0	0	0	2825	-856	-1.78
7223	C	-1969.39	855.37	2147	113	0	0	855	0	2825	-1970	-4.11

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
7223	D	-1969.39	855.37	2147	113	1969	0	855	0	2825	-1	0.00
7241	A	0.00	0.00			0	0	0	0	0	0	0.00
7241	B	0.00	0.00			0	0	0	0	0	0	0.00
7241	C	0.00	0.00			0	0	0	0	0	0	0.00
7241	D	0.00	0.00			0	0	0	0	0	0	0.00
7241	E	0.00	0.00			0	0	0	0	0	0	0.00
7241	F	0.00	0.00			0	0	0	0	0	0	0.00
7246	A	-0.02	-0.15	0	6	0	0	0	0	0	0	0.00
7246	B	-0.02	-0.15	0	6	0	0	0	0	0	0	0.00
7246	C	-0.02	-0.15	0	6	0	0	0	0	0	0	0.00
7246	D	-0.02	-0.15	0	6	0	0	892	0	0	892	1.86
7246	E	-0.02	-0.15	0	6	0	0	892	0	0	892	1.86
7246	F	-0.02	-0.15	0	6	0	0	0	0	0	0	0.00
7246	G	-0.02	-0.15	0	6	0	0	0	0	0	0	0.00
7246	H	-0.02	-0.15	0	6	0	0	0	0	0	0	0.00
7246	I	-0.02	-0.15	0	6	0	0	1007	0	0	1007	2.10
7246	J	-0.02	-0.15	0	6	0	0	1007	0	0	1007	2.10
7247	A	-2706.76	1007.14	2888	110	1699	0	672	0	3714	-1343	-2.80
7247	B	-2706.76	1007.14	2888	110	2707	0	672	0	3714	-335	-0.70
7247	C	-2706.76	1007.14	2888	110	0	0	1007	0	3714	-2707	-5.64
7247	D	-2706.76	1007.14	2888	110	2707	0	1007	0	3714	0	0.00
7247	E	-2706.76	1007.14	2888	110	2707	0	100	0	3714	-907	-1.89
7247	F	-2706.76	1007.14	2888	110	0	0	1007	0	3714	-2707	-5.64
7247	G	-2706.76	1007.14	2888	110	2707	0	1007	0	3714	0	0.00
7247	H	-2706.76	1007.14	2888	110	2707	0	1007	0	3714	0	0.00
9200	A	-2.68	0.57	3	102	0	0	0	0	3	-3	-0.01
9200	B	-2.68	0.57	3	102	3	0	76	0	3	76	0.16
9201	A	0.14	-0.14	0	316	1	0	0	0	0	1	0.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
9201	B	0.14	-0.14	0	316	0	0	0	0	0	0	0.00
9201	C	0.14	-0.14	0	316	0	0	1	0	0	1	0.00
9700	A	-21.82	17.71	28	129	0	0	0	0	40	-40	-0.08
9700	B	-21.82	17.71	28	129	22	0	0	0	40	-18	-0.04
9700	C	-21.82	17.71	28	129	22	0	0	0	40	-18	-0.04
9700	D	-21.82	17.71	28	129	0	0	18	0	40	-22	-0.04
9700	E	-21.82	17.71	28	129	22	0	18	0	40	0	0.00
9700	F	-21.82	17.71	28	129	0	0	18	0	40	-22	-0.04
9700	G	-21.82	17.71	28	129	22	0	18	0	40	0	0.00
9715	A	-247.23	216.00	328	131	202	0	639	0	463	378	0.79
9715	B	-247.23	216.00	328	131	247	0	639	0	463	423	0.88
9715	C	-247.23	216.00	328	131	247	0	639	0	463	423	0.88
9715	D	-247.23	216.00	328	131	574	0	216	0	463	327	0.68
9715	E	-247.23	216.00	328	131	247	0	216	0	463	0	0.00
9715	F	-247.23	216.00	328	131	247	0	216	0	463	0	0.00
9715	G	-247.23	216.00	328	131	247	0	0	0	463	-216	-0.45
9715	H	-247.23	216.00	328	131	247	0	0	0	463	-216	-0.45
9715	I	-247.23	216.00	328	131	247	0	0	0	463	-216	-0.45
9715	J	-247.23	216.00	328	131	574	0	216	0	463	327	0.68
9715	K	-247.23	216.00	328	131	247	0	216	0	463	0	0.00
9715	L	-247.23	216.00	328	131	574	0	216	0	463	327	0.68
9715	M	-247.23	216.00	328	131	247	0	216	0	463	0	0.00
9718	A	-18.10	-22.00	28	39	8	0	0	22	40	-10	-0.02
9718	B	-18.10	-22.00	28	39	18	0	0	22	40	0	0.00
9718	C	-18.10	-22.00	28	39	8	0	0	0	40	-32	-0.07
9718	D	-18.10	-22.00	28	39	18	0	0	0	40	-22	-0.05
9718	E	-18.10	-22.00	28	39	18	0	0	0	40	-22	-0.05
9718	F	-18.10	-22.00	28	39	18	0	0	0	40	-22	-0.05

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
9723	A	0.25	-0.60	1	337	0	0	0	1	1	0	0.00
9723	B	0.25	-0.60	1	337	0	0	0	1	1	0	0.00
9723	C	0.25	-0.60	1	337	0	0	0	4	1	3	0.01
9723	D	0.25	-0.60	1	337	0	0	0	4	1	3	0.01
9724	A	-202.27	122.61	237	121	0	0	0	0	325	-325	-0.68
9724	B	-202.27	122.61	237	121	202	0	52	0	325	-71	-0.15
9724	C	-202.27	122.61	237	121	202	0	52	0	325	-71	-0.15
9724	D	-202.27	122.61	237	121	0	0	123	0	325	-202	-0.42
9724	E	-202.27	122.61	237	121	202	0	123	0	325	0	0.00
9724	F	-202.27	122.61	237	121	202	0	123	0	325	0	0.00
9725	A	-7.96	7.00	11	131	0	0	0	0	15	-15	-0.03
9725	B	-7.96	7.00	11	131	8	0	0	0	15	-7	-0.01
9725	C	-7.96	7.00	11	131	8	0	0	0	15	-7	-0.01
9725	D	-7.96	7.00	11	131	0	0	7	0	15	-8	-0.02
9725	E	-7.96	7.00	11	131	8	0	7	0	15	0	0.00
9725	F	-7.96	7.00	11	131	8	0	7	0	15	0	0.00
9725	G	-7.96	7.00	11	131	8	0	0	0	15	-7	-0.01
9725	H	-7.96	7.00	11	131	0	0	7	0	15	-8	-0.02
9725	I	-7.96	7.00	11	131	8	0	7	0	15	0	0.00
9726	A	0.30	-0.38	0	322	0	0	0	0	1	-1	0.00
9726	B	0.30	-0.38	0	322	0	0	0	0	1	-1	0.00
9726	C	0.30	-0.38	0	322	0	0	0	0	1	-1	0.00
9726	D	0.30	-0.38	0	322	0	0	0	0	1	-1	0.00
9726	E	0.30	-0.38	0	322	0	0	0	0	1	-1	0.00
9726	F	0.30	-0.38	0	322	0	0	0	0	1	-1	0.00
9727	A	-111.09	52.06	123	115	0	0	0	0	163	-163	-0.34
9727	B	-111.09	52.06	123	115	111	0	0	0	163	-52	-0.11
9727	C	-111.09	52.06	123	115	0	0	52	0	163	-111	-0.23

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
9727	D	-111.09	52.06	123	115	111	0	52	0	163	0	0.00
9800	A	-343.82	-164.26	381	64	360	0	0	164	508	16	0.03
9800	B	-343.82	-164.26	381	64	344	0	0	164	508	0	0.00
9800	C	-343.82	-164.26	381	64	344	0	0	164	508	0	0.00
9800	D	-343.82	-164.26	381	64	360	0	0	103	508	-45	-0.09
9800	E	-343.82	-164.26	381	64	344	0	0	103	508	-61	-0.13
9800	F	-343.82	-164.26	381	64	344	0	0	7	508	-157	-0.33
9801	A	-383.11	-7.27	383	89	1033	0	0	7	390	650	1.35
9801	B	-383.11	-7.27	383	89	383	0	0	7	390	0	0.00
9801	C	-383.11	-7.27	383	89	383	0	0	7	390	0	0.00
9801	D	-383.11	-7.27	383	89	1033	0	0	0	390	643	1.34
9801	E	-383.11	-7.27	383	89	383	0	0	7	390	0	0.00
9801	F	-383.11	-7.27	383	89	383	0	0	7	390	0	0.00
9801	G	-383.11	-7.27	383	89	1769	0	0	0	390	1379	2.87
9801	H	-383.11	-7.27	383	89	383	0	0	0	390	-7	-0.02
9802	A	-122.37	-160.79	202	37	0	0	0	161	283	-122	-0.25
9802	B	-122.37	-160.79	202	37	122	0	0	161	283	0	0.00
9802	C	-122.37	-160.79	202	37	122	0	0	161	283	0	0.00
9802	D	-122.37	-160.79	202	37	0	0	0	161	283	-122	-0.25
9802	E	-122.37	-160.79	202	37	122	0	0	161	283	0	0.00
9802	F	-122.37	-160.79	202	37	122	0	0	60	283	-101	-0.21
9802	G	-122.37	-160.79	202	37	0	0	0	0	283	-283	-0.59
9802	H	-122.37	-160.79	202	37	122	0	0	0	283	-161	-0.34
9803	A	-359.87	-59.81	365	81	122	0	0	60	420	-238	-0.50
9803	B	-359.87	-59.81	365	81	360	0	0	60	420	0	0.00
9803	C	-359.87	-59.81	365	81	1890	0	0	0	420	1470	3.07
9803	D	-359.87	-59.81	365	81	360	0	0	103	420	43	0.09
9804	A	-1033.39	-102.73	1038	84	1890	0	0	0	1136	754	1.57

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2010-11 SFx ($g/cm^2/yr$)	2010-11 SFy ($g/cm^2/yr$)	2010-11 SF(Mag)	2010-11 SF(Dir)	2010-11 SFx(W)	2010-11 SFx(E)	2010-11 SFy(N)	2010-11 SFy(S)	2010-11 SFxy (Site)	2010-11 ΔSF	2010-11 Surface Change (cm)
9804	B	-1033.39	-102.73	1038	84	1033	0	0	103	1136	0	0.00
9804	C	-1033.39	-102.73	1038	84	1033	0	0	103	1136	0	0.00
9804	D	-1033.39	-102.73	1038	84	1969	0	0	0	1136	833	1.74
9804	E	-1033.39	-102.73	1038	84	1033	0	0	0	1136	-103	-0.22
9805	A	-1769.36	672.08	1893	111	1969	0	0	0	2441	-472	-0.99
9805	B	-1769.36	672.08	1893	111	1769	0	0	0	2441	-672	-1.40
9805	C	-1769.36	672.08	1893	111	1769	0	0	0	2441	-672	-1.40
9805	D	-1769.36	672.08	1893	111	1699	0	672	0	2441	-70	-0.15
9805	E	-1769.36	672.08	1893	111	1769	0	672	0	2441	0	0.00
9806	A	-1408.43	99.73	1412	94	1769	0	0	0	1508	261	0.54
9806	B	-1408.43	99.73	1412	94	1408	0	0	0	1508	-100	-0.21
9806	C	-1408.43	99.73	1412	94	1408	0	0	0	1508	-100	-0.21
9806	D	-1408.43	99.73	1412	94	2707	0	100	0	1508	1299	2.71
9806	E	-1408.43	99.73	1412	94	1408	0	100	0	1508	0	0.00
9806	F	-1408.43	99.73	1412	94	1408	0	100	0	1508	0	0.00
9807	A	-427.56	263.64	502	122	2707	0	100	0	691	2116	4.41
9807	B	-427.56	263.64	502	122	428	0	100	0	691	-163	-0.34
9807	C	-427.56	263.64	502	122	428	0	0	0	691	-263	-0.55
9807	D	-427.56	263.64	502	122	2707	0	264	0	691	2280	4.75
9807	E	-427.56	263.64	502	122	428	0	264	0	691	1	0.00
9807	F	-427.56	263.64	502	122	428	0	264	0	691	1	0.00
9808	A	-1889.56	1569.99	2457	130	0	0	0	0	3460	-3460	-7.21
9808	B	-1889.56	1569.99	2457	130	1890	0	0	0	3460	-1570	-3.27
9808	C	-1889.56	1569.99	2457	130	0	0	1570	0	3460	-1890	-3.94
9808	D	-1889.56	1569.99	2457	130	1890	0	1570	0	3460	0	0.00
9808	E	-1889.56	1569.99	2457	130	1890	0	0	0	3460	-1570	-3.27
9809	A	-1698.57	891.57	1918	118	0	0	855	0	2590	-1735	-3.62
9809	B	-1698.57	891.57	1918	118	1699	0	672	0	2590	-219	-0.46

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	**Cell**	**2010-11 SFx ($g/cm^2/yr$)**	**2010-11 SFy ($g/cm^2/yr$)**	**2010-11 SF(Mag)**	**2010-11 SF(Dir)**	**2010-11 SFx(W)**	**2010-11 SFx(E)**	**2010-11 SFy(N)**	**2010-11 SFy(S)**	**2010-11 SFxy (Site)**	**2010-11 ΔSF**	**2010-11 Surface Change (cm)**
9809	C	-1698.57	891.57	1918	118	0	0	892	0	2590	-1698	-3.54
9809	D	-1698.57	891.57	1918	118	1699	0	892	0	2590	1	0.00

Average	-0.11
Max	4.75
Min	-7.21

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
1730	A	-322.58	1099.13	1145	164	0	0	0	0	1422	-1422	-2.96
1730	B	-322.58	1099.13	1145	164	0	0	1099	0	1422	-323	-0.67
1730	C	-322.58	1099.13	1145	164	1099	0	0	0	1422	-323	-0.67
1730	D	-322.58	1099.13	1145	164	323	0	1099	0	1422	0	0.00
1730	E	-322.58	1099.13	1145	164	1099	0	1099	0	1422	776	1.62
1730	F	-322.58	1099.13	1145	164	323	0	1099	0	1422	0	0.00
1733	A	51.54	-321.71	326	351	0	52	0	322	373	1	0.00
1733	B	51.54	-321.71	326	351	0	0	0	322	373	-51	-0.11
1733	C	51.54	-321.71	326	351	0	52	0	519	373	198	0.41
1733	D	51.54	-321.71	326	351	0	0	0	0	373	-373	-0.78
1739	A	55.96	-264.52	270	348	0	56	0	265	320	1	0.00
1739	B	55.96	-264.52	270	348	0	0	0	265	320	-55	-0.12
1739	C	55.96	-264.52	270	348	0	56	0	0	320	-264	-0.55
1739	D	55.96	-264.52	270	348	0	0	0	32	320	-288	-0.60
1982	A	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	B	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	C	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	D	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	E	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	F	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	G	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	H	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	I	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	J	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	K	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
1982	L	-0.07	-0.40	0	10	0	0	0	0	0	0	0.00
7151	A	-371.27	104.57	386	106	0	0	0	0	476	-476	-0.99
7151	B	-371.27	104.57	386	106	0	0	105	0	476	-371	-0.77

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
7151	C	-371.27	104.57	386	106	371	0	0	0	476	-105	-0.22
7151	D	-371.27	104.57	386	106	0	0	105	84	476	-287	-0.60
7151	E	-371.27	104.57	386	106	371	0	105	84	476	84	0.18
7151	F	-371.27	104.57	386	106	371	0	0	84	476	-21	-0.04
7172	A	0.10	-0.42	0	347	0	0	0	0	1	-1	0.00
7172	B	0.10	-0.42	0	347	0	0	0	0	1	-1	0.00
7172	C	0.10	-0.42	0	347	0	56	0	0	1	55	0.12
7172	D	0.10	-0.42	0	347	0	0	0	0	1	-1	0.00
7172	E	0.10	-0.42	0	347	0	0	0	0	1	-1	0.00
7172	F	0.10	-0.42	0	347	0	56	0	0	1	55	0.12
7172	G	0.10	-0.42	0	347	0	0	0	0	1	-1	0.00
7172	H	0.10	-0.42	0	347	0	0	0	0	1	-1	0.00
7172	I	0.10	-0.42	0	347	0	0	0	0	1	-1	0.00
7173	A	-17.23	-519.12	519	2	0	0	0	519	536	-17	-0.04
7173	B	-17.23	-519.12	519	2	0	0	0	32	536	-504	-1.05
7175	A	0.21	0.25	0	219	64	0	0	0	0	64	0.13
7175	B	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	C	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	D	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	E	0.21	0.25	0	219	64	0	0	0	0	64	0.13
7175	F	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	G	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	H	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	I	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	J	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	K	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	L	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	M	0.21	0.25	0	219	0	0	0	0	0	0	0.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
7175	N	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	O	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	P	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	Q	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7175	R	0.21	0.25	0	219	0	0	0	0	0	0	0.00
7195	A	-16.81	108.65	110	171	0	0	0	0	125	-125	-0.26
7195	B	-16.81	108.65	110	171	17	0	0	0	125	-108	-0.23
7195	C	-16.81	108.65	110	171	17	0	0	0	125	-108	-0.23
7195	D	-16.81	108.65	110	171	0	0	109	0	125	-16	-0.03
7195	E	-16.81	108.65	110	171	17	0	109	0	125	1	0.00
7195	F	-16.81	108.65	110	171	0	0	109	0	125	-16	-0.03
7195	G	-16.81	108.65	110	171	17	0	109	0	125	1	0.00
7195	H	-16.81	108.65	110	171	0	0	109	31	125	15	0.03
7195	I	-16.81	108.65	110	171	17	0	109	31	125	32	0.07
7199	A	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	B	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	C	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	D	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	E	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	F	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	G	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	H	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	I	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	J	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	K	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	L	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	M	-0.12	0.31	0	159	0	0	0	0	0	0	0.00
7199	N	-0.12	0.31	0	159	0	0	0	0	0	0	0.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
7218	A	4.36	-31.40	32	352	0	4	109	31	36	108	0.23
7218	B	4.36	-31.40	32	352	0	4	109	31	36	108	0.23
7218	C	4.36	-31.40	32	352	0	4	335	31	36	334	0.70
7218	D	4.36	-31.40	32	352	0	0	335	31	36	330	0.69
7218	E	4.36	-31.40	32	352	0	4	0	31	36	-1	0.00
7218	F	4.36	-31.40	32	352	0	4	0	31	36	-1	0.00
7218	G	4.36	-31.40	32	352	0	4	0	31	36	-1	0.00
7218	H	4.36	-31.40	32	352	0	0	0	31	36	-5	-0.01
7218	I	4.36	-31.40	32	352	0	4	0	0	36	-32	-0.07
7218	J	4.36	-31.40	32	352	0	4	0	0	36	-32	-0.07
7218	K	4.36	-31.40	32	352	0	4	0	31	36	-1	0.00
7218	L	4.36	-31.40	32	352	0	0	0	31	36	-5	-0.01
7218	M	4.36	-31.40	32	352	0	4	0	0	36	-32	-0.07
7218	N	4.36	-31.40	32	352	0	0	0	0	36	-36	-0.07
7222	A	0.52	-0.23	1	294	0	1	0	0	1	0	0.00
7222	B	0.52	-0.23	1	294	0	0	0	0	1	-1	0.00
7222	C	0.52	-0.23	1	294	0	1	0	0	1	0	0.00
7222	D	0.52	-0.23	1	294	0	1	1369	0	1	1369	2.85
7222	E	0.52	-0.23	1	294	0	0	1369	0	1	1368	2.85
7222	F	0.52	-0.23	1	294	0	1	0	0	1	0	0.00
7222	G	0.52	-0.23	1	294	0	1	0	0	1	0	0.00
7222	H	0.52	-0.23	1	294	0	0	0	0	1	-1	0.00
7222	I	0.52	-0.23	1	294	0	1	0	0	1	0	0.00
7222	J	0.52	-0.23	1	294	0	1	0	0	1	0	0.00
7222	K	0.52	-0.23	1	294	0	0	1495	0	1	1494	3.12
7223	A	-2145.90	1495.45	2616	125	0	0	1369	0	3641	-2272	-4.74
7223	B	-2145.90	1495.45	2616	125	2146	0	0	0	3641	-1495	-3.12
7223	C	-2145.90	1495.45	2616	125	0	0	1495	0	3641	-2146	-4.48

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
7223	D	-2145.90	1495.45	2616	125	2146	0	1495	0	3641	0	0.00
7241	A	0.00	0.00			0	0	0	0	0	0	0.00
7241	B	0.00	0.00			0	0	0	0	0	0	0.00
7241	C	0.00	0.00			0	0	0	0	0	0	0.00
7241	D	0.00	0.00			0	0	0	0	0	0	0.00
7241	E	0.00	0.00			0	0	0	0	0	0	0.00
7241	F	0.00	0.00			0	0	0	0	0	0	0.00
7246	A	0.05	0.58	1	185	0	0	0	0	1	-1	0.00
7246	B	0.05	0.58	1	185	0	0	0	0	1	-1	0.00
7246	C	0.05	0.58	1	185	0	0	1	0	1	0	0.00
7246	D	0.05	0.58	1	185	0	0	1674	0	1	1673	3.49
7246	E	0.05	0.58	1	185	0	0	1674	0	1	1673	3.49
7246	F	0.05	0.58	1	185	0	0	1	0	1	0	0.00
7246	G	0.05	0.58	1	185	0	0	1	0	1	0	0.00
7246	H	0.05	0.58	1	185	0	0	1	0	1	0	0.00
7246	I	0.05	0.58	1	185	0	0	2569	0	1	2568	5.36
7246	J	0.05	0.58	1	185	0	0	2569	0	1	2568	5.36
7247	A	-2463.58	2568.69	3559	136	2486	0	1507	0	5032	-1039	-2.17
7247	B	-2463.58	2568.69	3559	136	2464	0	1507	0	5032	-1061	-2.21
7247	C	-2463.58	2568.69	3559	136	0	0	2569	0	5032	-2463	-5.14
7247	D	-2463.58	2568.69	3559	136	2464	0	2569	0	5032	1	0.00
7247	E	-2463.58	2568.69	3559	136	2464	0	880	0	5032	-1688	-3.52
7247	F	-2463.58	2568.69	3559	136	0	0	2569	0	5032	-2463	-5.14
7247	G	-2463.58	2568.69	3559	136	2464	0	2569	0	5032	1	0.00
7247	H	-2463.58	2568.69	3559	136	2464	0	2569	0	5032	1	0.00
9200	A	-25.15	-32.16	41	38	44	0	0	0	57	-13	-0.03
9200	B	-25.15	-32.16	41	38	25	0	0	0	57	-32	-0.07
9201	A	-44.36	436.87	439	174	0	0	0	0	481	-481	-1.00

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
9201	B	-44.36	436.87	439	174	17	0	437	0	481	-27	-0.06
9201	C	-44.36	436.87	439	174	44	0	0	0	481	-437	-0.91
9700	A	-122.52	334.76	356	160	17	0	109	0	457	-331	-0.69
9700	B	-122.52	334.76	356	160	123	0	437	0	457	103	0.21
9700	C	-122.52	334.76	356	160	123	0	437	0	457	103	0.21
9700	D	-122.52	334.76	356	160	17	0	335	0	457	-105	-0.22
9700	E	-122.52	334.76	356	160	123	0	335	0	457	1	0.00
9700	F	-122.52	334.76	356	160	17	0	335	31	457	-74	-0.15
9700	G	-122.52	334.76	356	160	123	0	335	31	457	32	0.07
9715	A	-64.40	-84.40	106	37	0	0	105	84	149	40	0.08
9715	B	-64.40	-84.40	106	37	64	0	105	84	149	104	0.22
9715	C	-64.40	-84.40	106	37	64	0	105	84	149	104	0.22
9715	D	-64.40	-84.40	106	37	323	0	0	84	149	258	0.54
9715	E	-64.40	-84.40	106	37	64	0	0	84	149	-1	0.00
9715	F	-64.40	-84.40	106	37	64	0	0	0	149	-85	-0.18
9715	G	-64.40	-84.40	106	37	64	0	0	0	149	-85	-0.18
9715	H	-64.40	-84.40	106	37	64	0	0	0	149	-85	-0.18
9715	I	-64.40	-84.40	106	37	64	0	0	0	149	-85	-0.18
9715	J	-64.40	-84.40	106	37	323	0	0	84	149	258	0.54
9715	K	-64.40	-84.40	106	37	64	0	0	84	149	-1	0.00
9715	L	-64.40	-84.40	106	37	323	0	0	0	149	174	0.36
9715	M	-64.40	-84.40	106	37	64	0	0	0	149	-85	-0.18
9718	A	-16.94	42.85	46	158	10	0	0	0	60	-50	-0.10
9718	B	-16.94	42.85	46	158	17	0	0	0	60	-43	-0.09
9718	C	-16.94	42.85	46	158	10	0	43	0	60	-7	-0.01
9718	D	-16.94	42.85	46	158	17	0	43	0	60	0	0.00
9718	E	-16.94	42.85	46	158	17	0	0	430	60	387	0.81
9718	F	-16.94	42.85	46	158	17	0	0	430	60	387	0.81

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
9723	A	96.44	-366.33	379	345	0	96	0	366	463	-1	0.00
9723	B	96.44	-366.33	379	345	0	52	0	366	463	-45	-0.09
9723	C	96.44	-366.33	379	345	0	96	0	265	463	-102	-0.21
9723	D	96.44	-366.33	379	345	0	52	0	265	463	-146	-0.30
9724	A	72.31	-520.05	525	352	0	72	1	520	592	1	0.00
9724	B	72.31	-520.05	525	352	0	72	0	520	592	0	0.00
9724	C	72.31	-520.05	525	352	0	0	0	520	592	-72	-0.15
9724	D	72.31	-520.05	525	352	0	72	0	322	592	-198	-0.41
9724	E	72.31	-520.05	525	352	0	72	0	322	592	-198	-0.41
9724	F	72.31	-520.05	525	352	0	0	0	0	592	-592	-1.24
9725	A	-9.83	64.68	65	171	0	0	0	0	75	-75	-0.16
9725	B	-9.83	64.68	65	171	10	0	0	0	75	-65	-0.13
9725	C	-9.83	64.68	65	171	10	0	0	0	75	-65	-0.13
9725	D	-9.83	64.68	65	171	0	0	65	0	75	-10	-0.02
9725	E	-9.83	64.68	65	171	10	0	65	0	75	0	0.00
9725	F	-9.83	64.68	65	171	10	0	65	0	75	0	0.00
9725	G	-9.83	64.68	65	171	10	0	0	0	75	-65	-0.13
9725	H	-9.83	64.68	65	171	0	0	65	0	75	-10	-0.02
9725	I	-9.83	64.68	65	171	10	0	65	0	75	0	0.00
9726	A	-0.09	0.80	1	174	0	0	65	0	1	64	0.13
9726	B	-0.09	0.80	1	174	0	0	43	0	1	42	0.09
9726	C	-0.09	0.80	1	174	0	96	43	0	1	138	0.29
9726	D	-0.09	0.80	1	174	0	0	1	0	1	0	0.00
9726	E	-0.09	0.80	1	174	0	0	1	0	1	0	0.00
9726	F	-0.09	0.80	1	174	0	96	1	520	1	616	1.28
9727	A	95.73	-430.25	441	347	0	96	43	430	526	43	0.09
9727	B	95.73	-430.25	441	347	0	0	43	430	526	-53	-0.11
9727	C	95.73	-430.25	441	347	0	96	0	520	526	90	0.19

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations ($g/cm^2/yr$)						
Site	Cell	2011-12 SFx ($g/cm^2/yr$)	2011-12 SFy ($g/cm^2/yr$)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
9727	D	95.73	-430.25	441	347	0	0	0	520	526	-6	-0.01
9800	A	-540.30	286.79	612	118	513	0	0	0	827	-314	-0.65
9800	B	-540.30	286.79	612	118	540	0	0	0	827	-287	-0.60
9800	C	-540.30	286.79	612	118	540	0	0	0	827	-287	-0.60
9800	D	-540.30	286.79	612	118	513	0	287	69	827	42	0.09
9800	E	-540.30	286.79	612	118	540	0	287	69	827	69	0.14
9800	F	-540.30	286.79	612	118	540	0	287	0	827	0	0.00
9801	A	-624.42	703.71	941	138	1140	0	287	0	1328	99	0.21
9801	B	-624.42	703.71	941	138	624	0	0	0	1328	-704	-1.47
9801	C	-624.42	703.71	941	138	624	0	0	0	1328	-704	-1.47
9801	D	-624.42	703.71	941	138	1140	0	704	0	1328	516	1.08
9801	E	-624.42	703.71	941	138	624	0	704	0	1328	0	0.00
9801	F	-624.42	703.71	941	138	624	0	704	0	1328	0	0.00
9801	G	-624.42	703.71	941	138	1957	0	704	0	1328	1333	2.78
9801	H	-624.42	703.71	941	138	624	0	704	0	1328	0	0.00
9802	A	-961.66	1107.71	1467	139	0	0	0	0	2069	-2069	-4.31
9802	B	-961.66	1107.71	1467	139	962	0	0	0	2069	-1107	-2.31
9802	C	-961.66	1107.71	1467	139	962	0	0	0	2069	-1107	-2.31
9802	D	-961.66	1107.71	1467	139	0	0	1108	0	2069	-961	-2.00
9802	E	-961.66	1107.71	1467	139	962	0	1108	0	2069	1	0.00
9802	F	-961.66	1107.71	1467	139	962	0	1108	0	2069	1	0.00
9802	G	-961.66	1107.71	1467	139	0	0	1108	0	2069	-961	-2.00
9802	H	-961.66	1107.71	1467	139	962	0	1108	0	2069	1	0.00
9803	A	-512.51	459.52	688	132	962	0	1108	0	972	1098	2.29
9803	B	-512.51	459.52	688	132	513	0	0	0	972	-459	-0.96
9803	C	-512.51	459.52	688	132	1815	0	460	0	972	1303	2.72
9803	D	-512.51	459.52	688	132	513	0	460	69	972	70	0.15
9804	A	-1140.01	-69.31	1142	87	1815	0	460	0	1209	1066	2.22

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations (g/cm^2/yr)						
Site	Cell	2011-12 SFx (g/cm^2/yr)	2011-12 SFy (g/cm^2/yr)	2011-12 SF(Mag)	2011-12 SF(Dir)	2011-12 SFx(W)	2011-12 SFx(E)	2011-12 SFy(N)	2011-12 SFy(S)	2011-12 SFxy (Site)	2011-12 ΔSF	2011-12 Surface Change (cm)
9804	B	-1140.01	-69.31	1142	87	1140	0	287	69	1209	287	0.60
9804	C	-1140.01	-69.31	1142	87	1140	0	287	69	1209	287	0.60
9804	D	-1140.01	-69.31	1142	87	2146	0	0	0	1209	937	1.95
9804	E	-1140.01	-69.31	1142	87	1140	0	0	0	1209	-69	-0.14
9805	A	-1956.55	1506.73	2469	128	2146	0	0	0	3463	-1317	-2.75
9805	B	-1956.55	1506.73	2469	128	1957	0	0	0	3463	-1506	-3.14
9805	C	-1956.55	1506.73	2469	128	1957	0	704	0	3463	-802	-1.67
9805	D	-1956.55	1506.73	2469	128	2486	0	1507	0	3463	530	1.10
9805	E	-1956.55	1506.73	2469	128	1957	0	1507	0	3463	1	0.00
9806	A	-1639.18	879.79	1860	118	1957	0	704	0	2519	142	0.30
9806	B	-1639.18	879.79	1860	118	1639	0	704	0	2519	-176	-0.37
9806	C	-1639.18	879.79	1860	118	1639	0	0	0	2519	-880	-1.83
9806	D	-1639.18	879.79	1860	118	2464	0	880	0	2519	825	1.72
9806	E	-1639.18	879.79	1860	118	1639	0	880	0	2519	0	0.00
9806	F	-1639.18	879.79	1860	118	1639	0	880	0	2519	0	0.00
9807	A	-875.30	1065.08	1379	141	2464	0	880	0	1940	1404	2.93
9807	B	-875.30	1065.08	1379	141	875	0	880	0	1940	-185	-0.39
9807	C	-875.30	1065.08	1379	141	875	0	0	0	1940	-1065	-2.22
9807	D	-875.30	1065.08	1379	141	2464	0	1065	0	1940	1589	3.31
9807	E	-875.30	1065.08	1379	141	875	0	1065	0	1940	0	0.00
9807	F	-875.30	1065.08	1379	141	875	0	1065	0	1940	0	0.00
9808	A	-1814.54	1368.95	2273	127	0	0	1108	0	3183	-2075	-4.33
9808	B	-1814.54	1368.95	2273	127	1815	0	1108	0	3183	-260	-0.54
9808	C	-1814.54	1368.95	2273	127	0	0	1369	0	3183	-1814	-3.78
9808	D	-1814.54	1368.95	2273	127	1815	0	1369	0	3183	1	0.00
9808	E	-1814.54	1368.95	2273	127	1815	0	460	0	3183	-908	-1.89
9809	A	-2486.44	1673.51	2997	124	0	0	1495	0	4160	-2665	-5.56
9809	B	-2486.44	1673.51	2997	124	2486	0	1507	0	4160	-167	-0.35

		Annual Net Sand Flux at Site				Annual Flux Difference Calculations (g/cm^2/yr)						
Site	**Cell**	**2011-12 SFx (g/cm^2/yr)**	**2011-12 SFy (g/cm^2/yr)**	**2011-12 SF(Mag)**	**2011-12 SF(Dir)**	**2011-12 SFx(W)**	**2011-12 SFx(E)**	**2011-12 SFy(N)**	**2011-12 SFy(S)**	**2011-12 SFxy (Site)**	**2011-12 ΔSF**	**2011-12 Surface Change (cm)**
9809	C	-2486.44	1673.51	2997	124	0	0	1674	0	4160	-2486	-5.18
9809	D	-2486.44	1673.51	2997	124	2486	0	1674	0	4160	0	0.00

Average	-0.16
Max	5.36
Min	-5.56