# **Quality Assurance and Data Validation Results**

Data timeframe (season/year): 2015		S	Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<b>Type</b>	N Records	<b>Query description</b>	Remedy details	QA by
1 qa_a113_Overview_sampling_visit_summary	Information		Number of locations by year for the current certification set, grouped by location type and unit code		
2 qa_a123_Transect_panel_visit_summary_by_yea	Information	n 7	Number of transects visited by year and panel number (panel 1 is the annual panel). Where Events.Is_excluded=False.		
3 qa_a132_Scheduled_locations_not_visited	Warning		Scheduled locations that were not visted in the year scheduled	Four annual panel transects were not sampled in 2014: AC.1-16, AC.1-12, AC.1-15, and AC.1-18	jboetsch
4 qa_a142_Unscheduled_locations_with_events	Warning	2	Locations associated with sites that were not scheduled for a visit in the year visited	Two transects were unintentionally sampled in 2009 due to a mixup in the field. Both are retained in the data set as they are complete transect events.	jboetsch
5 qa_a153_Summary_transect_obs_per_year	Information	n 45	Number of segment observations made for each transect by year, where Events.Is_excluded=False		
6 qa_a203_Sampling_event_date_ranges	Information		Returns the earliest and latest sample dates in the data set, grouped by year and unit code		
7 qa_a213_QA_status_by_year_summary	Information	n 7	Summary of number of event records by quality assurance status		
8 qa_a222_Unverified_events	Warning		List of unverified sampling events in the data set		
9 qa_a233_Quality_assurance_status	Information		Quality assurance status (i.e., unverified, verified, or updated) of all sampling events in the data set		
10 qa_a242_Events_excluded_from_summaries	Warning		Uncertified event records that are flagged to be excluded from data summary output	North ends of transects only that were surveyed in 2014 to confirm ground conditions and transect end points. Excluded because only parts of transects were surveyed.	jboetsch

Monday, July 11, 2016 Page 1 of 14

Data timeframe (season/year): 2015		5	Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name	Type NR	ecords	Query description	Remedy details	QA by
11 qa_a253_Events_excluded_by_year	Information	5	Event records that are flagged to be excluded from data summary output among years	Records excluded because only the north end of each transect was surveyed to verify transect end and to determine if the north ends of transects should be field surveyed each year or could be digitized from aerial photos.	RRochefort
12 qa_c101_Schedule_missing_critical_info	Critical	0	Schedule records with missing Calendar_year or Location_ID; OR or Location_ID has no matching record in tbl_Locations. Delete these records and reenter if necessary.		
13 qa_c111_Schedule_duplicate_records	Critical		Duplicate records on Calendar_year and Location_ID		
14 qa_d101_Locations_missing_critical_info	Critical		Missing Park_code, Unit_code, Location_code, Location_type, or Location_status; OR where Location_type='Transect' and missing either Firing_order or Panel_name		
15 qa_d111_Locations_duplicates_on_unit_and_loc	Critical		Duplicate records on Unit_code and Location_code		
16 qa_d121_Locations_values_not_in_lookups	Critical	0	Park_code, Location_type, Location_status, or Panel_type fields contain values that are not found in the respective lookup tables		
17 qa_d132_Locations_status_inconsistencies	Warning		Locations having Loc_established dates where status='Proposed'; 'Retired' records with missing Loc_discontinued; having Loc_discontinued dates where status other than 'Retired' or 'Rejected'; or sampled points (Is_excluded=False) w/ Loc_status='Proposed'		
18 qa_d142_Locations_inconsistent_panel_info	Warning	0	Inconsistent Panel_type and Panel_name values: Loc_status='Active' or 'Retired' but missing Panel_type; OR Panel_type missing but not Panel_name (or vice versa); OR Panel_type='Annual' and Panel_name<>'1'; OR Panel_type<>'Annual' and Panel_name='1'		

Monday, July 11, 2016 Page 2 of 14

Data timeframe (season/year): 2015		S	Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<u>Type</u>	N Records	Query description	Remedy details	QA by
19 qa_d152_Locations_missing_establishment_date	Warning		Sampled locations (where Is_excluded=False) missing establishment dates; OR where Loc_established is missing but Loc_discontinued is not null		
20 qa_d162_Locations_never_surveyed	Warning		Locations that do not have sampling events where Location_status is other than 'Rejected' or 'Proposed'		jboetsch
21 qa_d203_Locations_panel_design	Informatio		Inconsistent Panel_type and Panel_name values: Loc_status='Active' or 'Retired' but missing Panel_type; OR Panel_type missing but not Panel_name (or vice versa); OR Panel_type='Annual' and Panel_name<'1'; OR Panel_type<>'Annual' and Panel_name='1'		
22 qa_d213_Locations_transect_lengths	Informatio		Transect lengths as determined by the difference between the start and end target UTMs		
23 qa_d901_Locations_illogical_dates_X	Critical		Discontinued date prior to established date, or updated date prior to created date		
24 qa_f101_Events_missing_critical_info_X	Critical		Missing Location_ID, Project_code, or Start_date; OR Location_ID is not in tbl_Locations. Delete and re-enter as		
25 qa_f121_Events_illogical_dates_X	Critical		Events with end dates prior to start date, or updated or verified dates prior to the record entry date		
26 qa_f131_Events_missing_QA_info	Critical		Event records without entered date/by entries, or incomplete updated date/by or verified date/by entries		
27 qa_f142_Events_time_discrepancies	Warning		Events where the end time is before the start time (where the end date is either missing or the same as the start date); OR where the Start_time is either before 7am or after 7pm; OR where the End_time is either before 7am or after 7pm		Nantonova

Monday, July 11, 2016 Page 3 of 14

Data timeframe (season/year): 2015		5	Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<b>Type</b>	N Records	Query description	Remedy details	QA by
28 qa_f152_Transects_multiple_events_per_year	Warning	0	Transects with more than one sampling event record for a given calendar year. This may have unintended effects on data summarization and reduction if incomplete or overlapping sections of the transect were sampled in different events.		
29 qa_f162_Transects_with_multi-day_events	Warning	35	Transects with events spanning more than one calendar day. Events spanning multiple days may have unknown consequences on data quality due to changes in phenology and observer effects.	Multi-day events occurred in several instances across all years. In some cases, separate 1-day event records were merged into a single, multi-day event to facilitate data grouping for summarization and analysis.	jboetsch
30 qa_f172_Events_missing_transect_start_coords	Warning	0	Sampling events with missing transect start point easting/northing values		
31 qa_f182_Events_missing_hours_spent	Warning	1	Sampling events where Hours_spent is missing or is >10 hours. This field was was added to field forms after 2012. Confirm complete data entry and document any anomalies.	AC.4-4 in 2009 - no start or end times recorded in the field. No GPS files collected to extract time.	Nantonova
32 qa_f193_Events_missing_declination_X	Information	on 163	Sampling events with missing declination correction values	Declination corrections were not recorded, 2007-2015	jboetsch
33 qa_f202_Events_without_observers	Warning	1	Events without any associated observers. Confirm complete data entry.	No field forms were filled out and no GPS points collected. Transect segment was digitized in GIS using aerial photos. Survey date was estimated, and therefore crew members are unknown.	Nantonova
34 qa_f212_Events_without_phenology_obs	Warning	89	Events without any associated phenology observations (initial pilot years did not have phenology observations). Confirm complete data entry and document any anomalies.	AC 1-1: 2015, 2014, 2013 - in forest and even when transect was field checked no phenology was recorded, in 2012 AC1-1 surveyed but no phenology recorded 2015: AC 1-16, 1-7, 3-3, 3-4 no phenology data recorded, 2014: AC, 3-2, 3-5, 4-2, 4-3, 6-5 - only north ends verified, no phenology recorded 2012: AC 1-10, 1-13, 1-3, 1-14,1-17, 1-18, 1-19, 1-20, 5-4, 5-5 no phenology recorded 2007-2009: no phenology was recorded on the field forms	Nantonova

Monday, July 11, 2016 Page 4 of 14

Data timeframe (season/year): 2015		S	Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<u>Type</u>	N Records	Query description	Remedy details	QA by
35 qa_f222_Events_without_transect_segment_obs	Warning		Events without any associated transect segment observations. Confirm complete data entry.		
36 qa_h101_Observers_missing_critical_info	Critical		Missing Event_ID, Contact_ID, or Observer_role; or these values are not found in their respective lookup tables. Delete records with missing values.		
37 qa_i101_Project_crew_missing_critical_info	Critical		Missing Contact_ID, Project_code, Last_name, or First_name		
38 qa_i112_Project_crew_missing_info	Warning	0	Missing Organization or Position_title		
39 qa_m101_Analysis_Notes_missing_critical_info	Critical		Missing Analysis_year or Location_ID; or Location_ID does not exist in tbl_Locations		
40 qa_m111_Analysis_Notes_duplicate_records	Critical		Duplicate records on Location_ID and Analysis_year		
41 qa_m122_Analysis_Notes_missing_notes	Warning	0	Missing Analysis_notes		
42 qa_n101_Task_list_missing_critical_info	Critical		Missing task description, request date, or status; or the completed date is before the request date; or the completed date is filled in but the status is not 'Complete'; or Location_ID does not exist in tbl_Locations		
43 qa_n111_Task_list_duplicate_records	Critical		Task list duplicate records on Location_ID, Task_desc, and Request_date		
44 qa_n122_Task_list_inconsistent_status	Warning		Task records where Task_status='Active' but Location_status<>'Active'		
45 qa_n133_Task_list_summary	Information	on 0	Summary of task list items		
46 qa_p101_Phenology_obs_missing_critical_info	Critical		Missing Event_ID, Species_code or Stage_code; OR Event_ID is not found in the parent table tbl_Events. Delete and reenter any affected records.		
47 qa_p111_Phenology_obs_duplicate_records	Critical		Duplicate records on Event_ID, Species_code and Stage_code		
48 qa_p121_Phenology_obs_values_not_in_lookup	Critical		Phenology observation records where Species_code or Stage_code fields contain values that are not found in the respective lookup tables		

Monday, July 11, 2016 Page 5 of 14

Data timeframe (season/year): 2015			Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<b>Type</b>	N Record	s Query description	Remedy details	QA by
49 qa_p132_Phenology_obs_species_data_anomali	Warning	0	Phenology obs where 'PTEAQU' observed and Stage_code is either 'Fl' (flowering) or 'Fr' (fruiting) or 'LS' (lvs senescing); OR <>'PTEAQU' observed and Stage_code='Em' (emerging fiddleheads); OR <>'PTEAQU' and an average height was recorded		
50 qa_p142_Phenology_obs_height_out_of_range	Warning	0	Phenology obs where Avg_height_m is $<0$ or $>1.5$ m		
51 qa_p153_Phenology_obs_height_by_year	Information	on 4	Summary of phenology species height information by year		
52 qa_p163_Phenology_obs_species_stages_by_ye	Information	on 12	Summary of species phenology stage information by year		
53 qa_p201_Transect_obs_missing_critical_info	Critical	0	Missing Event_ID, Segment_num, Veg_type, Origin or Cover_class; OR Event_ID is not found in the parent table tbl_Events. Delete and re-enter any affected records.		
54 qa_p211_Transect_obs_duplicate_records	Critical	0	Duplicate records on Event_ID and Segment_num		
55 qa_p221_Transect_obs_values_not_in_lookups	Critical	0	Transect observation records where Veg_type, Origin, Cover_class or Substrate fields contain values that are not found in the respective lookup tables		

Monday, July 11, 2016 Page 6 of 14

**Data timeframe (season/year):** 2015 **Scope:** Uncertifed events only **Report run time:** 07/11/16 18:55

## Query name Type N Records Query description

56 qa p232 Transect obs segment count mismatc Warning

Transect obs records where the number of segments does not match the maximum segment number. Some of these may be due to removing segments collected beyond the start/end points. Confirm correct data entry and document any anomalous numbering.

## Remedy details

All transects with min segment number greater than 1 had one or more segments deleted if they were located south of the 2015 transect start coordinates.

2015 AC.1-6: segment 3 was combined

with segment 2 because, on field form, Salix was changed from Tree cover type to Shrub for segment 3, thus making segments 2 and 3 identical.

2014 AC.1-9: segments 72 and 73 were combined because they were recorded on field form as identical.

2014 AC 2-5: segments 7-9 were combined into one because the change was related to Cover class, wich is no longer collected for Shrub cover type. Segment 48 was combined with 47 because it they were identical on the field form.

2014 AC.1-10: segments 58-60 were combined into one because information for these segments was identical on the field form.

2014 AC.1-14: sement 17 was removed because it was realized in the field that the crew was off the transect.

2014 AC.1-19: segments 61 and 62 were combined into one because they were identical on field form; segment 68 was deleted because crew realized they were off transect.

2014 AC.1-2: segments 23 and 24 were combined into one because they were identical on field form.

2013 AC.6-4: segments 18 and 19 were combined into one because they were identical on field form.

2012 AC.1-12: segments 36-38 were absorbed into segment 35 because crew strayed to adjacent transect during survey and 36-38 recorded incorrect cover type. 2012 AC.1-11: Segment 18 was

QA by

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Monday, July 11, 2016 Page 7 of 14

Data timeframe (season/year): 2015 **Scope:** Uncertifed events only

**Query name** 

Type N Records Query description

#### Remedy details

OA by

07/11/16 18:55

decided we will no longer record trail segments in forest cover. 2012 AC.1-19: Segment 40 was combined with segment 39 because it was decided we will no longer record trail segments in forest cover. 2012 AC.1-4: Segments 28-36 were replaced with segments 28-34 when GPS coordinates showed that the crew was on an adjacent transect. The crew went back to resurvey this part of transect and ended up with fewer segments than originally recorded. 2012 AC.1-8: segments 30-35 were deleted because a native plant was misundentified as exotic, generating several exotic prairie transects with different native cover class. 2009 AC.1-12:transect was surveyed by two different teams on two different dates and autonumbering started at 1 on both cases. Two parts of transect were processed separately in GIS (northern part first) and 100 was added to each autonumber for the southern part to differentiate from the autonumbers of the northern part of transect resulting in large gap between the last point of the northern part of transect and the first point of the southern part. 2009 AC.1-18: Field notes indicated

**Report run time:** 

combined with segment 17 because it was

segment 33 was deleted in the field for unknown reasons.

2009 AC.1-4: segments 45 and 46 were deleted when crew realized they were on the wrong transect.

2007 AC.2-5: segment 50 was combined with segment 49 because both had identical cover type (native trees).

Monday, July 11, 2016 Page 8 of 14

Data timeframe (season/year): 2015		9	Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<b>Type</b>	N Records	Query description	Remedy details	QA by
57 qa_p242_Transect_obs_missing_end_segment	Warning		Transect events with no 'End' segment. May use the AutoFix query to automatically append the target end coordinates as the end.		
58 qa_p252_Transect_obs_multple_end_segments	Warning	0	Transect events with more than one 'End' segment. There should be only one per year/event.		
59 qa_p262_Transect_obs_missing_field_coordinat	Warning	0	Transect obs records where Field_coord is missing		
60 qa_p272_Transect_obs_field_coordinates_out_o	Warning		Transect obs records where Field_coord has the wrong number of digits (<>7 for American Camp northings or <>6 for English Camp eastings); OR Field_coord values outside the park bounding box (<5366200 Or >5383000 for AC, <488000 Or >502500 for EC)		
61 qa_p282_Transect_obs_category_discrepancies_	Warning	0	Transect observations for herbaceous segments (Veg_type='H') where: Origin='E' but having an invalid Cover_class='50-100%'; OR having 'NA' (instead of 'Not obs') for either Origin or Cover_class; OR where Is_grazed is missing		
62 qa_p292_Transect_obs_category_discrepancies_	Warning	0	Transect obs where Veg_type='T' or 'S' where Origin='NA' (instead of 'Not obs', 'E' or 'N'); OR having an invalid Cover_class (other than 'NA'). Cover classes collected sporadically for tree and shrub types pre-2012 should be moved to Office_notes.	385 records fixed by automatically moving cover observations to the Obs_notes field and setting Cover_class to 'NA'. These records were primarily pre-2013 before it was decided not to collect cover class in Tree and Shrub segments.	jboetsch
63 qa_p302_Transect_obs_category_discrepancies_	Warning	0	Transect observations where Veg_type In ('U','D','End') having something other than 'NA' for either Origin or Cover_class; OR where Veg_type<>'H' and Is_grazed=True; OR where 'Veg_type'='U' and missing Substrate (instead of 'Not obs')		
64 qa_x101_Locations_without_target_coords	Critical	0	Locations missing target coordinate records		jboetsch
65 qa_x111_Locations_unpaired_target_coords	Critical		Locations with <>2 related target coordinate records. Each transect should have a start and end target coordinate record.		

Monday, July 11, 2016 Page 9 of 14

Data timeframe (se	eason/year): 2015		\$	Scope: Uncertifed events only	Report run time:	07/11/16 18:55
Query name		<b>Type</b>	N Records	Query description	Remedy details	QA by
66 qa_x121_Target_coor	d_duplicates	Critical	0	Duplicate target coordinate records on Location_ID and Target_type		
67 qa_x131_Target_coor	d_errors	Critical	0	Target coordinates missing Target_type; with incomplete UTMs; having the wrong number of digits; missing datum; having illogical created/updated dates; or the Location_ID is not in the parent table		
68 qa_x141_Target_coor	ds_not_in_NAD83	Critical	0	Target coordinate records that are not in NAD83		
69 qa_x151_Target_coor	ds_for_transects_not_align	Critical	0	Target coordinates for transect start/end points where either the eastings do not match (American Camp) or the northings do not match (Engligh Camp)		
70 qa_x202_Transect_sta	art_coords_mismatch	Warning	163	Sampling events where transect start point easting/northing values do not match the target start coordinates. Review and document mismatches in excess of 3m.	All records are below threshold distance.	Nantonova
71 qa_x211_Transect_ob	s_missing_UTMs	Critical	0	Transect observations with missing or incomplete final UTMs		
72 qa_x221_Transect_ob	s_missing_segment_length	Critical	0	Transect observations with missing Segment_length_m. Run the AutoFix query to fill 'End' segments with 0.		
73 qa_x231_Transect_ob	s_segment_length_errors	Critical	0	Transect observations where Segment_length_m <0 or is more than 1m longer than the transect length (calculated as the difference between the target start and end points); OR is >0 for End segments		

Monday, July 11, 2016 Page 10 of 14

Data timeframe (season/year): 2015		<b>Scope:</b> Uncertifed events only		Report run time:	07/11/16 18:55
Query name	<b>Type</b>	N Records	Query description	Remedy details	QA by
74 qa_x242_Transect_obs_field_coordinate_discrep	Warning	233	Transect segments for which the difference between Field_coord and the final UTMs is more than 3m: Field_coord-UTMN (AC) or Field_coord-UTME (EC). Fix and/or document mismatches in excess of 3m.	Vast majority of records had offsets applied in the field, which was documented in either Obs_notes or Office_notes fields.  AC.1-14.31 on 5/21/2013 and AC.1-14 on 6/13/2012: offset was recorded or estimated incorrecly in the field. When applied, point ended up in the middle of lagoon. Adjusted offset in the office to 149 meters.  Some of the remaining records are segments that are close to trees, which would influence field coordinate accuracy. There were no offsets recorded on the field forms in 2008 and older GPS units were used, both of which might have influenced field coordinate accuracy.	Nantonova
75 qa_x252_Transect_obs_suspect_GPS_flag	Warning	137	Transect segments for which the No_GPS flag may be suspect because the Field_coord and the final UTMs are different where No_GPS=True	AC.1-10 on 6/15/2012 - field coordinate represents location before offset was applied. No GPS point was collected and final coordinate represents the location after the offset was applied in GIS, hence the discrepancy.  Remainder of the differences between the final UTMs and Field UTMs are small enough to not be considered significant (less than 2 m) and are a result of rounding off of GIS coordinate when populating Field coordinate or minor adjustments of field coordinate in GIS based on field notes.	Nantonova
76 qa_x262_Transect_obs_beyond_transect_start_e	Warning	0	Transect segments with UTMs that are more than 1m beyond the target start/end points: UTME/N <target_utme (start),="" n="" or="" utme="">Target_UTME/N (end). Fix and/or document mismatches in excess of 3m.</target_utme>		

Monday, July 11, 2016 Page 11 of 14

Data timeframe (season/year): 2015		S	<b>Scope:</b> Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<u>Type</u>	N Records	Query description	Remedy details	QA by
77 qa_x272_Transect_obs_UTMs_off_transect	Warning		Transect segments with UTMs that are more than 2m off the transect line (determined as the average Target_UTME/N). Review and document mismatches in excess of 3m.	For records where Difference_m is greater than 3 m: all 12 records have GPS files with horizontal error less than 2 m and no apparent errors in data processing. AC.3-4 on 5/13/2015, AC.1-12.33-35 on 6/25/2009, AC.1-14 on 4/29/2008 and AC.3-1 on 5/1/2008 - are all near trees which could have affected navigation accuracy; AC.1-5.4-7 on 7/5/2012, AC.1-5-6 on 4/30/2008 and AC.1-19.8 on 5/6/2013 are in the open with no aparent reason for poor horizontal accuracy. Could be operator error.	jboetsch
78 qa_x282_Transect_obs_segment_sequence_flags	Warning		Transect segments where the segment sequence Flag=1 (unresolved)		
79 qa_x292_Transect_obs_AC_obs_ID_sequence_e	Warning		Transect segments in American Camp where the segment sequencing is in question: where Observation_ID (autonum) is matched on next Obs_ID (+1), the UTMs for the segment in question are greater than the UTMs for the next segment. Review and document.	2014: according to field notes, AC.2-2.41 was collected after AC.2-2.40, but to the south of it using an offset. Veg types match aerial photos; 2013: AC.1-17.22 and AC.1-8.34 and 2009: AC.1-17.24 were added in the office to the beginning of transects to indicate erroded cliff (crews could not get to transect start in the field); 2009: AC.1-12.101 - transect was surveyed by two different teams on two different dates and autonumbering started at 1 on both cases. Two parts of transect were processed separately in GIS (northern part first) and 100 was added to each autonumber for the southern part to differentiate from the autonumbers of the northern part of transect.	Nantonova

Monday, July 11, 2016 Page 12 of 14

**Data timeframe (season/year):** 2015 **Scope:** Uncertifed events only **Report run time:** 07/11/16 18:55

# Query name Type N Records Query description

80 qa x302 Transect obs AC segment num sequ Warning

4 Transect segments in American Camp where the segment sequencing is in question: where Segment\_num is matched on next Segment\_num (+1), the UTMs for the segment in question are greater than the UTMs for the next segment. Review and document.

## Remedy details

2014: according to field notes, AC.2-2.41 was collected after AC.2-2.40, but to the south of it using an offset. Veg types match aerial photos;

2013: AC.1-17.22 and AC.1-8.34, 2012: AC.1-11.24 and 2009: AC.1-17.24 were added in the office to the beginning of transects to indicate erroded cliff (crews could not get to transect start in the field); 2009:AC.1-12.53-55, AC.1-13.59-60, AC.1-15.75, AC.4-1.75, AC.4-5.66 were not GPS'ed or given a segment number in the field (field coordinates estimated on field form). They were added later in the GIS using first available number after the transect end.

2009: Segments AC.1-16.57, AC.1-4.63, were added to the beginning of transect to match the 2014 or 2014 transect start. 2009: Segment AC.1-6.51 was inserted in the office because a road in the forest in the middle of the transect was not GPS'd. 2009: Northern part of transect AC.1-8 was surveyed by different crews on different days. Autonumbering was not used on the northern part and segments were renumbered in the office, accidentally leaving a gap in numbers. Missing number was then used for a segment further along the transect. 2009: Start of AC.4-3 was surveyed later than the northern part and segments 11-14 were added later in the office. 2008: Segments 17-22 were attached to the start of the transect AC.3-5 in the office using aerial photos after it was decided that the survey should start on the beach instead of bluff. 2007: Segments 61-62 were attached to the start of the transect AC.1-4 in the office using aerial photos after it was decided that the survey should start on

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OA by

Monday, July 11, 2016 Page 13 of 14

Data timeframe (season/year): 2015		S	<b>Scope:</b> Uncertifed events only	Report run time:	07/11/16 18:55
Query name	<u>Type</u>	N Records	Query description	Remedy details the beach instead of bluff.	QA by
81 qa_x312_Transect_obs_EC_obs_ID_sequence_e	Warning		Transect segments in English Camp where the segment sequencing is in question: where Observation_ID (autonum) is matched on next Obs_ID (+1), the UTMs for the segment in question are greater than the UTMs for the next segment. Review and document.		
82 qa_x322_Transect_obs_EC_segment_num_sequ	Warning		Transect segments in English Camp where the segment sequencing is in question: where Segment_num is matched on next Segment_num (+1), the UTMs for the segment in question are greater than the UTMs for the next segment. Review and document.		
83 qa_x332_Transect_obs_AC_segment_length_ch	Warning		Transect segments in American Camp sorted by UTMN for exporting an calculating/checking segment length.  Complete this step after resolving other QA queries. After reloading any updated segment lengths and rerunning the queries, check this query as Done.	Export and final calculation of segment length on 7/11/2016 18:45	jboetsch

Monday, July 11, 2016 Page 14 of 14