

Glen Tomkinson
Ridgefield Solar Farm Partnership
620 Righters Ferry Road
Bala Cynwyd PA 19004
Phone:(610) 668-0300 x1000
Fax:(610) 668-0365

June 7, 2016

Dear Mr. Tomkinson:

RE: Post-Construction (Year 1) Results for Ridgefield Solar Farm Partnership

Background

The Natural Heritage Assessment – Environmental Impact Study Report for the Penn Energy – Ridgefield Solar Energy Facility (NHA) prepared by Bowfin Environmental Consulting Inc. (Bowfin) indicated that pre-construction surveys were required for four candidate significant wildlife habitat (SWH). These were:

1. Reptile Hibernacula
2. Turtle Overwintering Habitat
3. Amphibian Breeding Habitat (woodland)
4. Amphibian Breeding Habitat (marsh)

Following the results of the pre-construction report (December 2013) it was determined that only the Turtle Overwintering Habitat met the significance criteria as established by the Ministry of Natural Resources and Forestry (MNR) in their *SWH Ecoregion 6E Criterion Schedule (SWHECS)*. Mitigation measures and post-construction monitoring for Turtle Overwintering Habitat as described in the NHA remained in place. These are listed below for ease of reference.

Mitigation Measures:

- Construction crew would be educated about the location and significance of this feature and will be trained to avoid turtles by conducting a visual inspection of the work site prior to the commencement of the daily activities. The crew would be made aware that they need to avoid harming turtles. Workers will be provided with an ID

manual of turtles and protocol of what to do if s are present (i.e. wait for turtles to pass, avoid turtles). The contact information of a SAR biologist who will be responsible for safely transporting turtles will be provided. Construction crew will record the number and species of any turtles observed.

- The access road use and vehicular speeds will be minimized during mid-October to November (when turtles are moving towards the wintering area) and early spring (i.e. after ice melt till mid-end of June, when turtles leave the wintering area for nesting sites). During these same periods a thorough sweep of the work areas within 100 m of the wintering area will be performed daily prior to any work commencing within this area.

Post-construction Monitoring:

The same protocol as followed for the pre-construction monitoring will be used to determine impacts to use of the habitat by turtles. Monitoring will be completed beginning the first spring following the completion of the construction works and will continue for an additional 2 years (total of 3 years of post-monitoring). A report outlining the findings will be provided to MNRF by the end of that year.

Contingency:

If the post-monitoring results find that a negative impact occurred, then the proponent will contact MNRF to discuss additional measures.

The following letter report provides a summary of post-construction monitoring for Year 1.

METHODOLOGY

The protocol followed were visual surveys as agreed to in the NHA and used during the pre-construction monitoring. These are summarized below and the location of the area surveyed is identified on Figure 1.

Data to be recorded:

- Date
- Name of observer(s) conducting field work
- Time (start and end time, duration)
- Weather conditions (temperature, % cloud cover, wind)
- GPS location
- Species presence and abundance information

Areas to be searched: Community 15 (Wetland 2)

Timing: Spring 2016

Duration: 3 years (2016-2018)

Frequency and Timing:

- 2 visits to candidate turtle over-wintering areas
 - 1st visit will occur in late March
 - 2nd visit will occur in late April
- Visits will be on warm sunny days when the turtles are most likely basking

RESULTS

Two visits were completed between March and April 2016 (Table 1). Both were completed by Michelle Lavictoire (M. Sc. Natural Resources). The results are summarized below and depicted on Figure 2.

Table 1 Site Visit Summary

| Date | Time (h) | Staff | Staff Hours | Air Temperature (Min-Max) °C | Weather |
|----------------|-----------|---------------|-------------|------------------------------|---------------------------|
| March 30, 2016 | 1300-1345 | M. Lavictoire | 0.75 | 10 -5.9-12.2) | 5% cloud cover, light air |
| April 15, 2016 | 1315-1415 | | 1 | 14 (-3.7-16.9) | 5% cloud cover, light air |

*Min-Max Temp Taken From: Environment Canada. National Climate Data and Information Archive. Peterborough Trent University, Ontario. Available <http://climate.weatheroffice.gc.ca/> [June 7, 2016]

While frogs were seen on the surface of the pond, no turtles were observed during the first visit. The presence of a little piece of thin ice on the shaded side suggests that turtles were likely still be hibernating. Six painted turtles were observed on the April 15th visit.

Table 2 Summary of Turtle Observations

| Date | Species | Number/Comments |
|-------------------------------|----------------|-----------------|
| March 30 th , 2016 | None | 0 |
| April 15 th , 2016 | Painted Turtle | 6 (±10-15 cm) |



Photo 1 Two painted turtles with their heads poking out of the vegetation
(April 15th, 2016)



Photo 2 One painted turtle basking (April 15th, 2016)

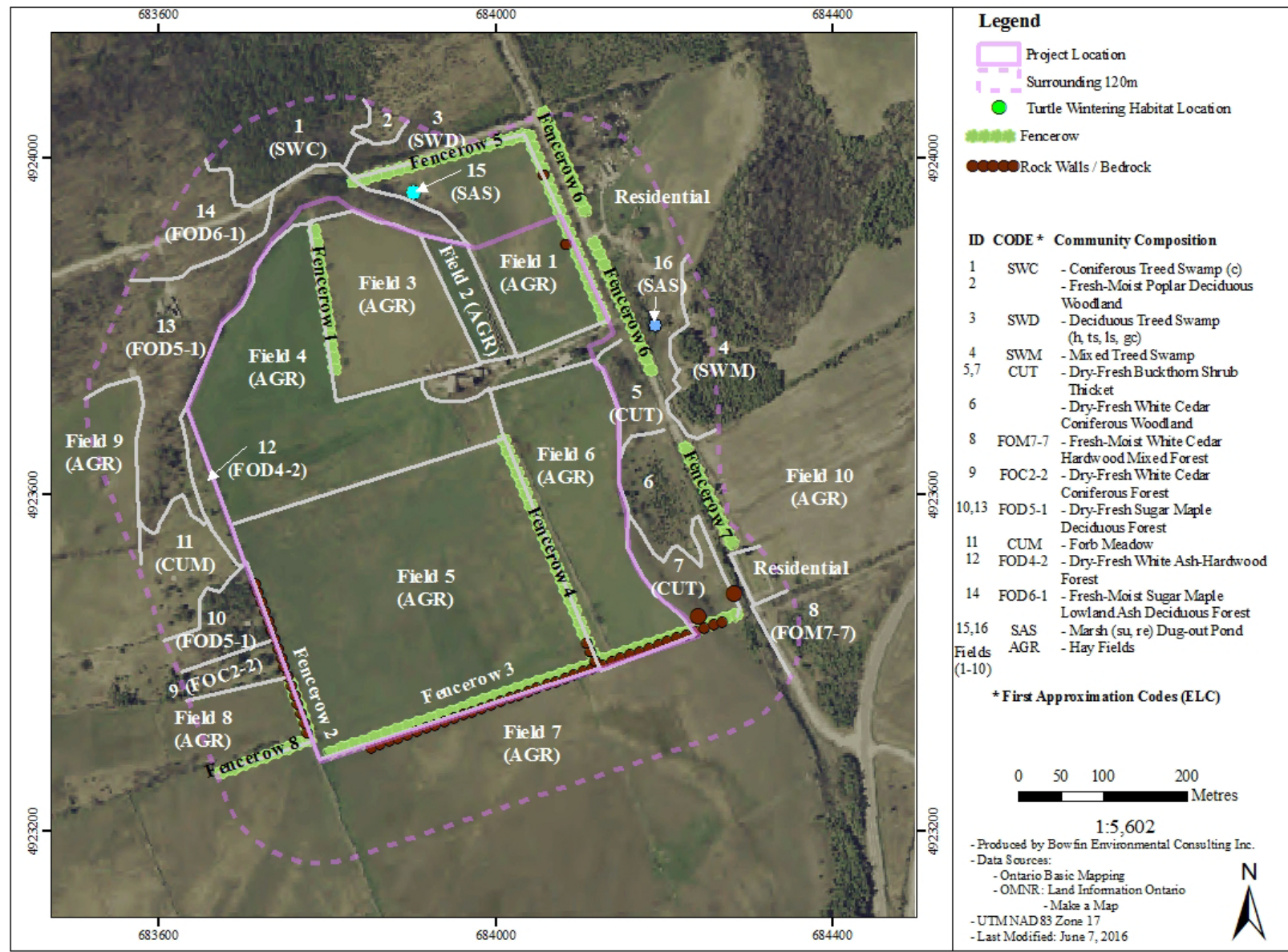
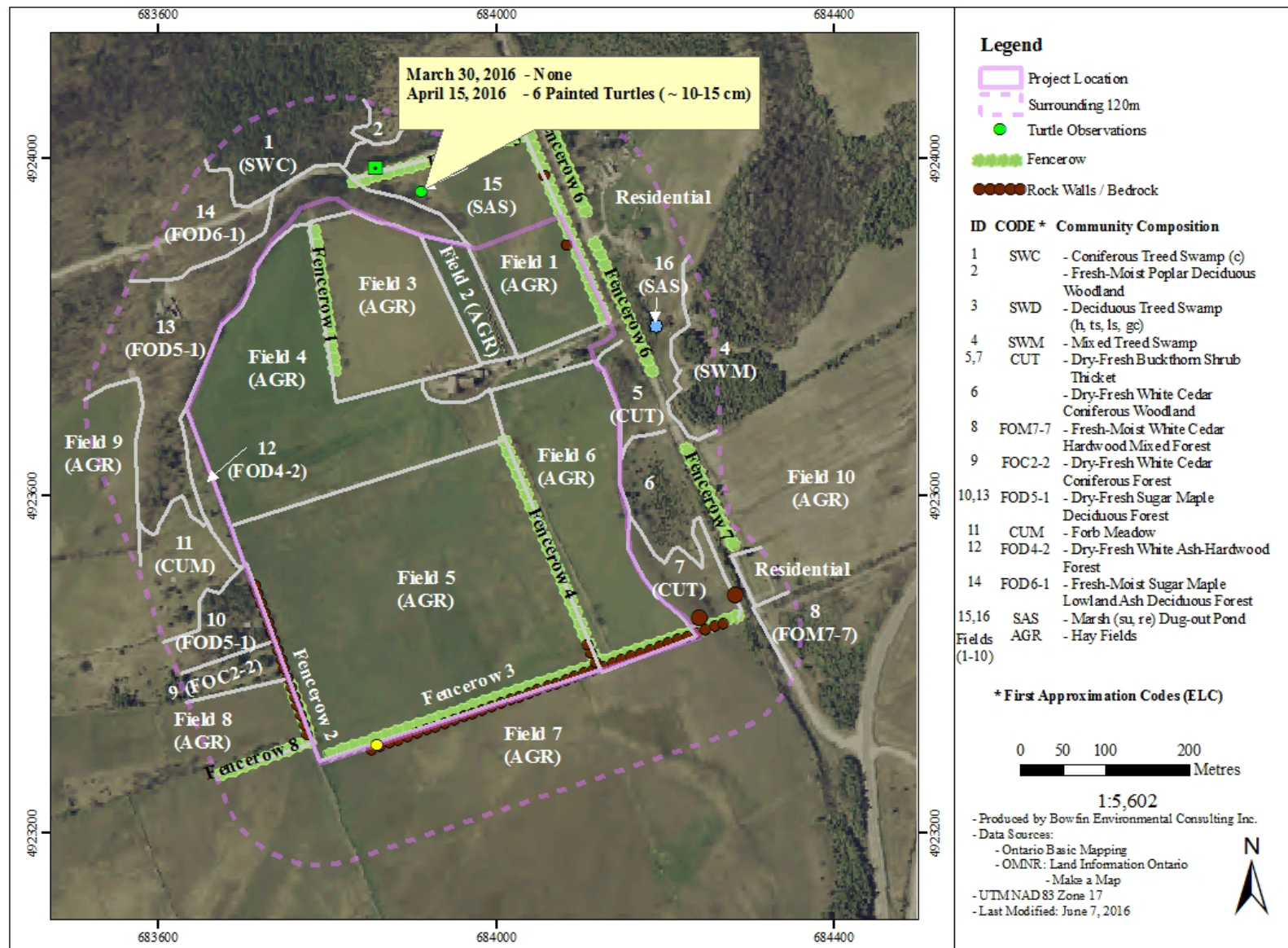
Figure 1 Location of Survey Areas

Figure 2 Results

CONCLUSION

The purpose of the post-construction monitoring is to verify that the SWH continues to meet the appropriate SWHECS defining criteria to remain significant. For Turtle Wintering Habitat the criteria are as follows:

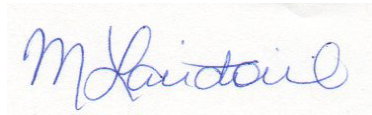
- Presence of minimum of 5 overwintering midland painted turtles; or
- Presence of ≥ 1 northern map OR snapping within a wetland; or

Six painted turtles were observed during the April 15th visit indicating that this pond continues to provide SWH for Turtle Wintering Habitat. No negative impacts were observed.

The post-construction monitoring will continue in 2017. At this time, no contingency measures are required.

Should you have any questions or comments, please do not hesitate to contact me at 613.935.6139.

Yours Sincerely,



Michelle Lavictoire
Biologist/Principal

Table 3 Summary of Mitigation Measures for Turtle Wintering Habitat (from NHA Table 12)

| Feature ID | Distance to Project Location | Potential Negative Effects | Mitigation Measures | Objectives, Post-Construction Monitoring, and Contingency Plans |
|------------------|------------------------------|--|---|---|
| Wetland 2 | 41m | <ul style="list-style-type: none"> Sedimentation and/or erosion (construction) | <ul style="list-style-type: none"> Design and implement a sediment and erosion control plan prior to any removal of vegetation or grading. Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the periphery of the construction area. This will also serve to demarcate boundaries to keep workers and equipment out of these features. | <p>Performance Objectives:</p> <ul style="list-style-type: none"> Maintain vegetated buffers between wetland and project location. Minimize impacts to natural features and associated wildlife habitats. <p>Monitoring:</p> <ul style="list-style-type: none"> Construction monitoring to ensure proper installation and maintenance of erosion control measures. Monitoring of silt fencing daily in areas where work is taking place and prior to and after any storm events. Correcting silt fencing that is not working properly. <p>Contingency Measures: None required.</p> |
| | | <ul style="list-style-type: none"> Spills (i.e. oil, gasoline, grease, etc.) (construction and operation) | <ul style="list-style-type: none"> All maintenance activities, vehicle refueling or washing, and chemical storage will be located more than 30m from any significant natural feature in a designated area where proper precautions (i.e. tarps) have been installed to ensure that no contamination of the soil occurs. Develop a spill response plan and train staff on appropriate procedures. Keep emergency spill kits on site. Dispose of waste material by authorized and approved offsite vendors. | <p>Performance Objectives:</p> <ul style="list-style-type: none"> Minimize impacts to natural features and associated wildlife habitats. <p>Monitoring: None required.</p> <p>Contingency Measures: None required.</p> |
| | | <ul style="list-style-type: none"> Changes in soil moisture and compaction (construction and operation) | <ul style="list-style-type: none"> Implement infiltration techniques to the maximum extent possible. Minimize paved surfaces and design roads to promote infiltration. Limit work activities to the area outside of the drip line of the woodland. | <p>Performance Objectives:</p> <ul style="list-style-type: none"> Minimize impact to soil moisture regime and vegetation species composition. <p>Monitoring: None required.</p> <p>Contingency Measures: None required.</p> |
| | | <ul style="list-style-type: none"> Changes to surface water | <ul style="list-style-type: none"> Limit changes in land contours. | <p>Performance Objectives:</p> |

| Feature ID | Distance to Project Location | Potential Negative Effects | Mitigation Measures | Objectives, Post-Construction Monitoring, and Contingency Plans |
|------------|------------------------------|---|--|--|
| | | hydrology (construction) | <ul style="list-style-type: none"> • Maintain direction and quantity of surface flow. • Minimize construction of impermeable surfaces. | <ul style="list-style-type: none"> • Maintain existing surface water flow patterns. <p>Monitoring: None required.</p> <p>Contingency Measures: None required.</p> |
| | | <ul style="list-style-type: none"> • Contamination of runoff water by herbicides (operational) | <ul style="list-style-type: none"> • The vegetation within the project location will be mowed on a regular basis. This will minimize and possibly eliminate the need for herbicides thereby reducing/eliminating the potential to create poor water quality of the runoff. • Minimize herbicide application. • Herbicide application will not exceed the manufacturer's directions. | <p>Performance Objectives:</p> <ul style="list-style-type: none"> • Minimize indirect impacts on wetland habitat and their communities. <p>Monitoring: Monitor operational activities to ensure any herbicide application follows safe practices.</p> <p>Contingency Measures: None required.</p> |