

6.0 Blanding's Turtle and Planning Urban Development in the SMH

Urban development is a reality for the lands adjacent to the SMH Conservation Forest. Within the curve of Terry Fox Drive, it is expected that residential communities will be developed over the next several years. The proposed changes will have direct impacts on Blanding's turtle core habitat in the South March Highlands. Below we briefly review the four main changes that will affect the SMH Blanding's population the most; 1) The conversion of turtle habitat to residential developments, 2) The proposed use of the Kizell Wetland as a storm water management facility, 3) The realignment of West Shirley's Brook, and 4) The realignment of Goulbourn Forced Road.

6.1 Residential Development in Turtle Habitat

The Blanding's Turtle study area Zones 9A and 9B (Dillon 2011a) overlay the locations of Phases 7 & 8 of the KNL (Kanata Lakes) approved draft plan of subdivisions. They are separated by the Arnprior Nepean Railway Line that bisects the South March Highlands, with the new Terry Fox Drive extension defining the northern limit. Phase 7 lies south of the rail line, Phase 8 to the north. **Figure 14** provides a schematic of the approved draft plan as proposed by the Urbandale Development Corporation in 2004, with the turtle study zones superimposed on top. This version of the draft plan of subdivision is currently outdated and is currently undergoing revision by the KNL land development group. KNL currently maintains ownership of Trillium Woods, east of the Second Line road allowance south of Terry Fox Drive, an area of hardwood forest that has been promised to the City of Ottawa as part of the Natural Area dedication. A 40% dedication of green space was determined through a 1983 hearing of the Ontario Municipal Board (OMB, 1983) and reconfirmed in 2006 during the appeal process, as part of the Official Plan review by the City (OMB, 2006). Four other blocks of land listed below were specifically mentioned in the OMB decision (OMB, 1983; OMB 2006):

- Beaver Pond and associated Black Cherry trees - Zone 7B above
- Kizell Pond (Kizell Drain wetland) – southern portion of Zone 7A
- West Block (hardwood beech forest) – northern lobe of Zone 7A and Zone 6A
- Trillium Woods – Zone 5

For the purposes of the Population Viability Analysis modeling and subsequent scenario sensitivity testing, the assumption was made that all habitats (watercourses, wetlands, vernal pools, forests and grasslands) would be converted to residential uses. It will therefore be the responsibility of the proponent(s) to offset the impacts on Blanding's turtle as described herein, by implementing a number of the conservation management recommendations made in the preceding section, under a duly approved application under the Endangered Species Act of 2007. Habitats of this nature will become regulated by the Province on July 1, 2013, under the existing legislation.

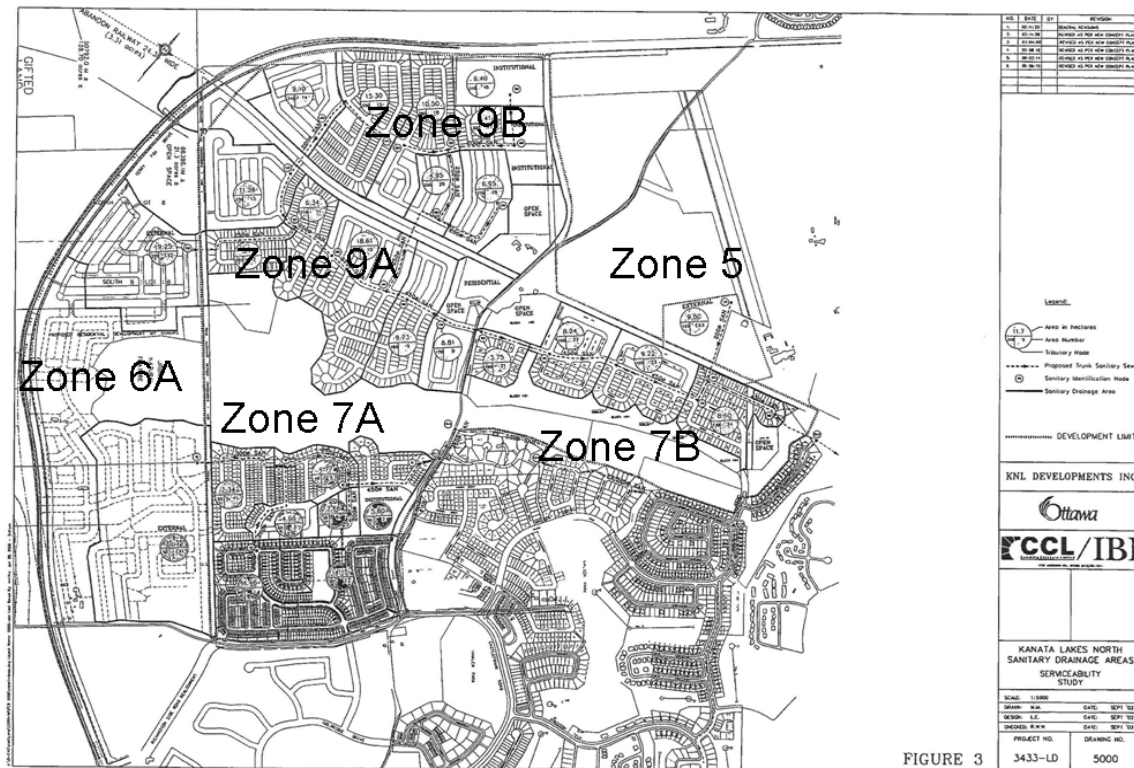


Figure 14. Planned urban development by Kanata Lakes (KNL) near the South March Highlands. Note that the plan shown is not current and is being revised by KNL.

* The Blanding's Turtle Population Distribution Study Zones have been superimposed on the map for clarity purposes.

During the three years of study on Blanding's turtle in the South March highlands, this species has only been found twice in Trillium Woods, but repeatedly in the Kizell Drain wetland. They have been observed once in the Beaver Pond east of Goulbourn Forced Road and have traversed through the West Block along the First Line road allowance, and west to the Carp River, occasionally. Several Blanding's have been caught in Shirley's Brook in Zone 9A and as noted earlier, Zone 9B is a known Blanding's turtle overwintering and nesting area.

The current, draft-approved KNL land development proposal is expected to impact habitats important for the Blanding's turtle SMH population. Proceeding as proposed, the land development will impact movement corridors (Shirley's Brook, First Line), impact a confirmed core nesting site, impact overwintering sites, clear mixed woodlots used occasionally by Blanding's turtles and remove the vernal pool cascade, which provides year-round core habitat for at least 7 adults. Of the four areas identified by the OMB as part of the 40% dedication of green space, only the Kizell Wetland has a significant population of Blanding's turtle and is considered to be core habitat. The Kizell Wetland is planned to receive most of the stormwater runoff from both Phases 7 and 8 in the current KNL plan. The other three areas identified by the OMB, zoned Natural Environment and planned to be preserved as Open Space, appear to be valuable habitats for other terrestrial flora and fauna, but not for Blanding's turtles.

6.2 *Kanata Lakes Stormwater Management Plan*

The current Draft Approved Plan prepared by IBI Consultants for the KNL property proposes a diversion of storm water runoff from 150 ha of land (KNL Phases 7 and 8), which currently drains into the Shirley's Brook system, into Watt's Creek *via* the Kizell Wetland and Kizell Drain. The Kizell Wetland-Beaver Pond system is an approved stormwater management facility. This combined facility has already exceeded its approved capacity (AECOM, 2011). At the time of preparation of this report, the City understands that KNL is revising its stormwater management plan in response to capacity constraints and potential biological impacts on the Kizell Wetland.

Any alterations to the Kizell Wetland for increased stormwater management will need to consider the characteristics in the wetland that make it high quality core habitat for Blanding's turtle. Permanent increases in water level could change the vegetation community and the habitat structure from a complex, diverse system to a simple system dominated by broad-leave cattail or exotic invaders. If eggs were successfully laid by adult females in close proximity to the shoreline, then temporary water level changes in response to storm events could drown them. Dredging and construction inside the wetland to increase its stormwater capacity could remove habitat, including critical overwintering habitat. During construction, all life stages would be prone to disturbance, damage or mortality, and finding a construction window that does not conflict with the life stages of Blanding's turtle or other regulated species could be difficult. These potential impacts could result in turtle emigration, reproductive failure, injury or death. Preventing or mitigating them will be a significant challenge.

6.3 *Destruction or Isolation of Phase 8 Nesting Area*

Development of Phases 7 and 8 would destroy or isolate the Blanding's turtle nesting area in Phase 8. The exact nest locations are not known, but radio telemetry suggests that nesting occurs along the north tree line of the field immediately north of the rail line, and/or possibly on the embankment of the rail line. In either case, the proposed development would either eliminate the nesting sites, or block turtle access to them.

6.4 *Planned West Shirley's Brook Realignment*

Within the study area, Shirley's Brook occurs as two tributaries that come together to form the main stem within Phase 7 of the KNL development lands. On the KNL lands, both the east and west tributaries have been previously ditched to improve drainage for agriculture, as has the main stem. The east Shirley's Brook tributary drains Provincially Significant Wetlands (PSW) north of Terry Fox Drive, through Zones 3 and 4, and flows for a short distance north of the rail line, before passing beneath and then flowing diagonally southeast toward the main stem confluence. A 250 m reach of the east tributary was realigned by the City of Ottawa, on its own property, in 2010 as part of the Terry Fox Drive construction. Approximately 350 m of the east tributary remains on KNL lands immediately south of Terry Fox Drive. The City is unaware of any proposal to relocate or enclose this reach.

The 2004 draft plan of subdivision would re-align a portion of the west tributary and the main stem of Shirley's Brook north, to run parallel and adjacent to the rail line. This would alter one of the movement corridors to/from the Phase 8 nesting area, and to/from further east along Shirley's Brook. In the overall context of development of Phases 7 and 8, which would include loss of the nesting area, this additional

impact on Blanding's turtles would be relatively minor. However, the realignment might offer some opportunity for habitat compensation, if measures could be implemented to prevent the area from becoming an "ecological trap". An "ecological trap" is an area with apparently suitable habitat attractive to animals, but with an increased exposure to hazards, causing it to become a population sink (negative population growth).

6.5 Goulbourn Forced Road Realignment

A Class Environmental Assessment (EA) conducted in 2005 by the City of Ottawa (Dillon Consulting Limited, 2005) recommended a preferred alignment and service improvement of Goulbourn Forced Road. In 2007, the Goulbourn Forced Road Environmental Study Report identified the preferred alignment for GFR to the west of Trillium Woods. The existing roadway is a two-lane hard surface road, in rural cross section, considered to be substandard and prone to flooding from the Kizell Wetland. Temporary remedial works to prevent flooding were completed in 2012, primarily to stop beavers from damming the single large bore (900 mm) culvert. The 2005 Class EA recommended a straighter roadway, separated from Trillium Woods, intersecting with Terry Fox Drive, approximately 400 m west of Second Line. At the time, although Blanding's turtle were recognized as being in the area, the 2005 Class EA predated the 2007 *Endangered Species Act*, so the occurrence of Blanding's turtle was not considered significant, nor was the location of their core habitats known. The proposed realignment passes through or very close to a series of six cascading vernal pools, identified as potential overwintering Blanding's turtle core habitat in the 2011/12 mark and recapture and radio telemetry programs (Dillon 2011b, 2012b).

We recommend reviewing the preferred alignment and amending the Class Environmental Assessment of Goulbourn Forced Road in at least two locations; the realignment near the Second Line Road intersection and the level crossing of the Kizell Wetland.

- Realignment of the roadway should be considered to avoid the vernal pool core habitats in Zone 9B, providing a natural vegetation buffer of sufficient width to avoid impacts to the groundwater table elevations, flow direction and volume. The location should aim to minimize or avoid stormwater runoff flows towards the vernal pools and should avoid disturbing any overwintering habitat.
 - If the vernal pools are approved for removal for development under an Endangered Species Act application procedure however, no realignment of GFR at this location would be necessary given that the core habitats will no longer exist.
- At the level crossing of the Kizell Wetland, provide the roadway improvements by removing the fill to the pre-development organic layer and undertaking remediation of the impacted soils. We suggest improving the crossing by constructing a flat causeway structure on piers, allowing for the free flow of water, nutrients, animals and resources below the structure while eliminating the risk of flooding during major events.
- Considering that Goulbourn Forced Road will be improved to a collector-level road, it is suggested that a limited Wildlife Guide System be constructed between the vernal pools in Zone 9B and Trillium Woods in Zone 5.