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CONFIRMED RED-EARED SLIDER REPRODUCTION IN ONTARIO

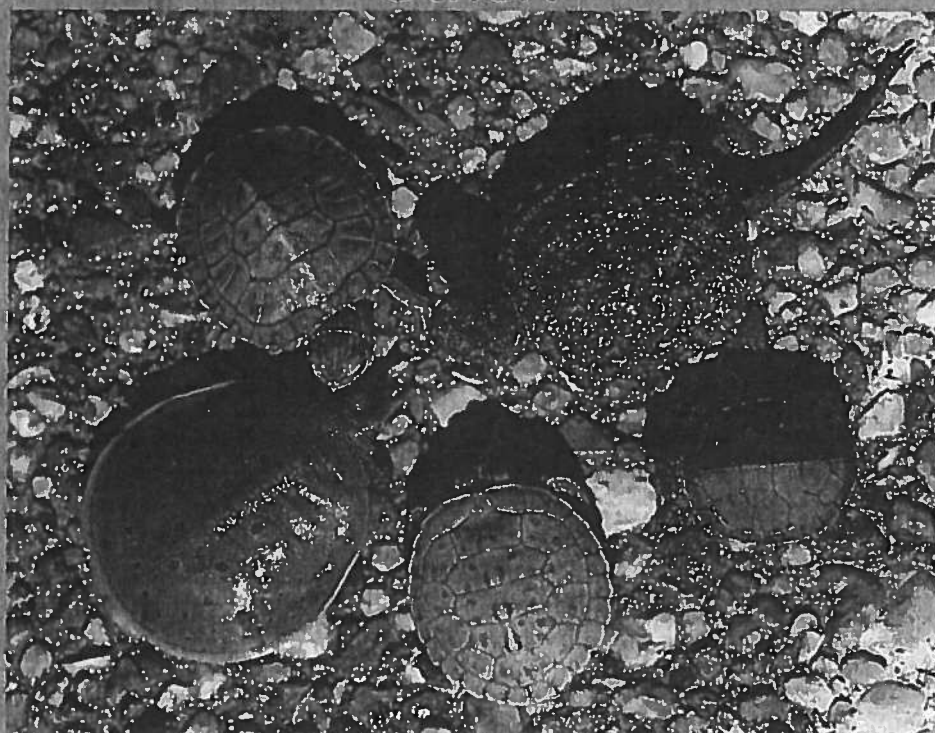
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Upper Thames River Conservation
Authority



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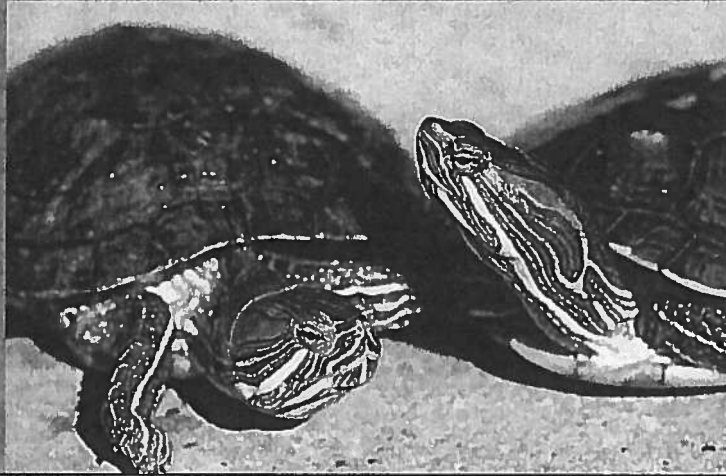


One Of These Things Is Not Like The Other!



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- The Red-eared Slider (*Trachemys scripta elegans*) is one of the most commonly sold and kept species of turtle in existence, with large-scale breeding farms producing hundreds of thousands of hatchlings to meet global pet and food demands



- due to large space requirements and a moderately large adult size, many keepers lose interest and release their pets



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Native Distribution

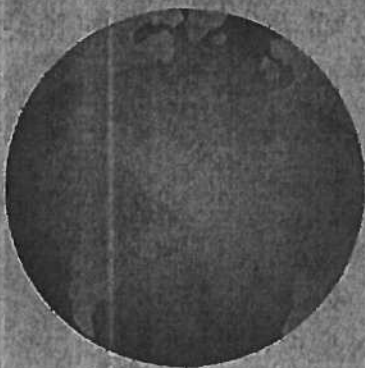
South-central U.S. and N. Mexico (not fully expressed in map)

- Native to south central United States and northern Mexico, released Red-eared sliders are now found in the wilds of many countries around the world.



Sliders On The Move

- Introduced throughout much of the U.S., as well as parts of Canada, Bermuda, South America, various Caribbean Islands, Hungary, Austria, Sweden, Czechoslovakia, Spain, Italy, France, Greece, Germany, Belgium, UK, Cyprus, Denmark, Russia, Finland, Lithuania, Poland, Israel, Bahrain, Guam, Mariana Islands, French Polynesia, Micronesia, Mascarene Islands, South Africa, Thailand, Malaysia, Vietnam, Korea, Japan, Indonesia, Taiwan, Singapore, New Zealand, Australia, China, Netherlands.



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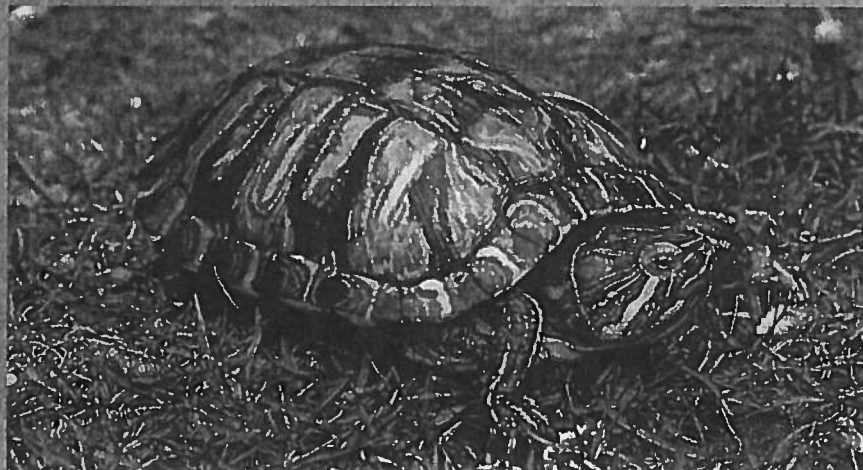
Ontario

- During a seven year study on Red-eared Sliders found released/escaped in southwestern Ontario, data on winter survival, active season threats, oviposition times, clutch size, clutch frequency, egg fertility, and hatch rate were recorded.



Winter Survival

- Adult sliders can survive multiple winters outside of their natural range in both pond and river habitats. Survival of at least 8 consecutive years has been documented in Ontario. Longevity can be more than 50 years.



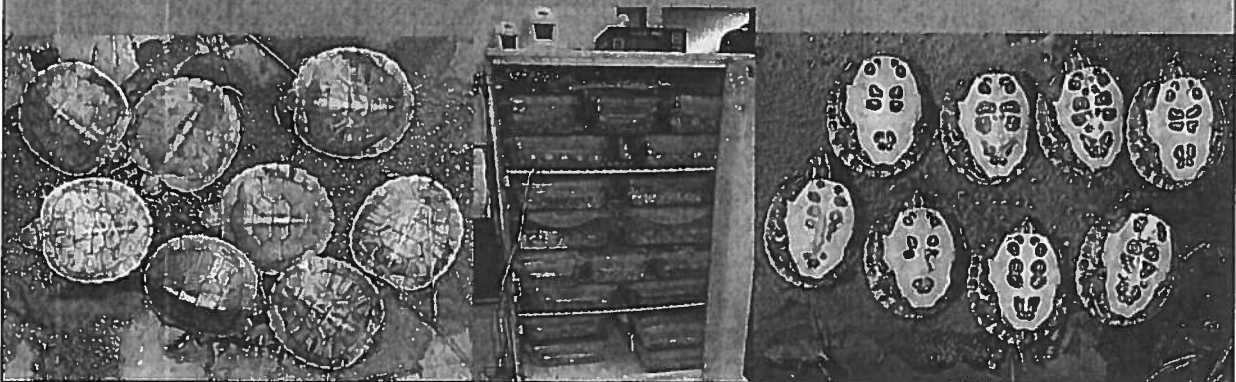
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Turtles Studied

- Komoka Female - 2007 to 2009
- Exeter Ausable Female - 2008 to 2013
- London Coves Female 1 - 2009 to 2012
- London Coves Female 2 – 2012
- London Westminster Female – 2013
- London Fanshawe Female 1 - ~2005 to 2013
- London Fanshawe Female 2 – 2011 to 2012

Komoka Female - 2007 to 2009

- First reported nesting July 17, 2007
- Incubated artificially to confirm species and fertility
- 8 of 15 hatched October 1, 2007, the remainder showed no sign of development
- Reported nesting again in same spot in 2008, though nest was depredated
- Female killed crossing road to same yard in 2009



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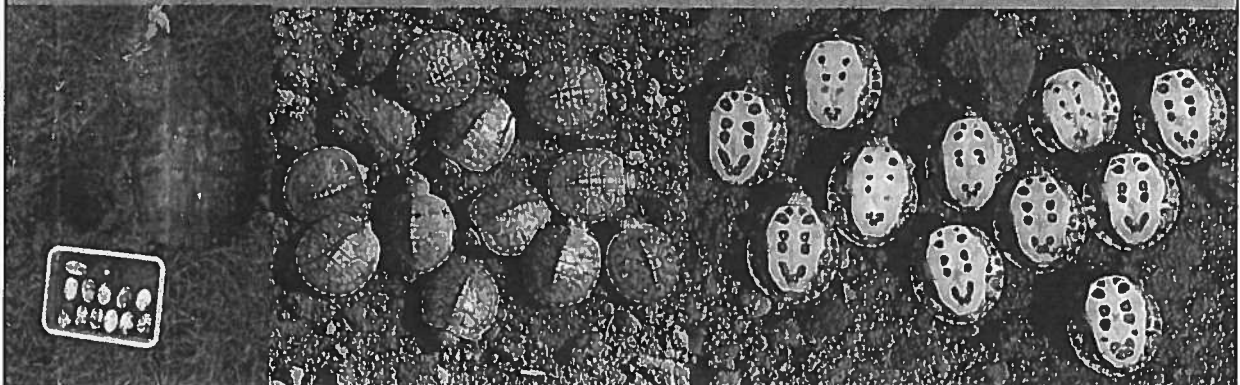
Exeter Ausable Female - 2008 to 2013

- First found nesting July 17, 2008
- Eggs artificially incubated to determine fertility; all eggs failed to develop
- Found nesting July 22, 2013.
- Eggs translocated, caged and allowed to develop under natural Ontario conditions; eggs were fertile and hatched



London Coves Female 1 - 2009 to 2012

- Female first observed basking in urban pond in 2009
- Female found nesting in nearby yard June 16, 2011
- A total of 12 full-sized eggs and a single small egg were translocated, caged and allowed to develop under natural Ontario conditions; 11 young emerged September 2, 2011
- Predated nest found on same yard in 2012



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London Coves Female 2 – 2012

- Found nesting June 25, 2012
- 12 eggs translocated, caged and allowed to develop under natural conditions to assess fertility
- 9 hatchlings emerged September 8, 2012. A total of 3 eggs failed to develop.



London Westminster Female – 2013

- Nest laid in back yard June 17, 2013
- Nest depredated June 28, 2013 before a protective cage was placed over nest



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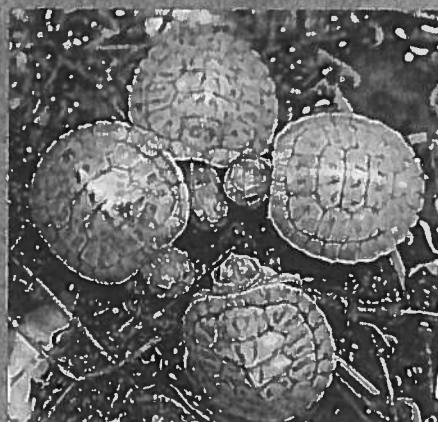
London Fanshawe Female 1 ~2005 to 2013

- Unconfirmed reports of slider nesting in same location since 2005
- Confirmed nests at this location found depredated in 2007, 2008, 2009 and 2010 (2).
- Female confirmed nesting July 1, 2011
- 11 eggs translocated, caged and allowed to develop under natural Ontario conditions; 10 eggs hatched on September 10th and 11th, 2011.



London Fanshawe Female 1 ~2005 to 2013 ... continued

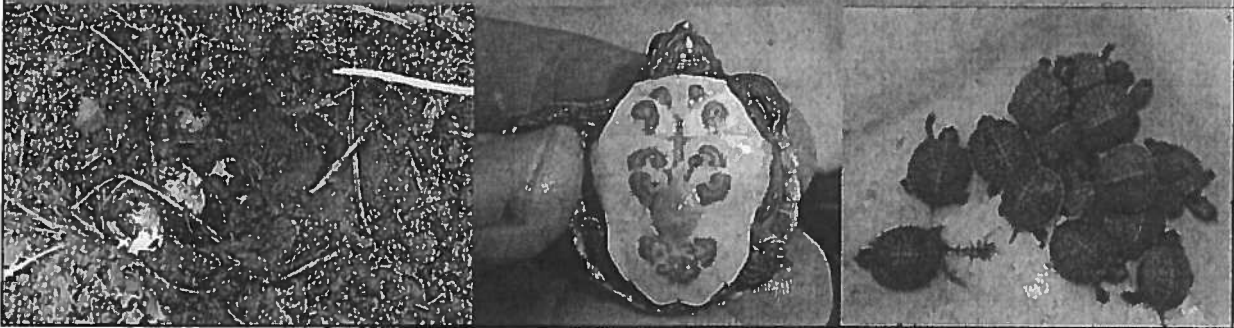
- Female found nestling in same spot May 24, 2012
- 14 eggs left in-situ, caged and allowed to incubate under natural Ontario conditions
- 12 hatchlings emerged July 28, 2012. Two eggs failed to develop.



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London Fanshawe Female 1 ~2005 to 2013 ... continued

- Female found nesting at same spot June 5, 2013
- 14 eggs left in-situ, caged and allowed to incubate under natural Ontario Conditions; 14 hatchlings emerged August 21, 2013
- Female laid second clutch June 26, 2013; nest depredated within 24 hours



London Fanshawe Female 2 – 2011 to 2012

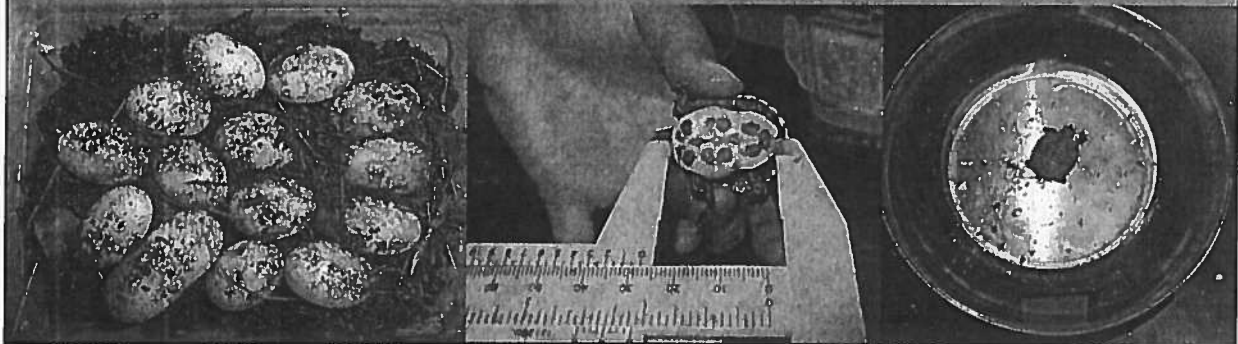
- Female found nesting on July 8, 2011
- 14 eggs translocated, caged and allowed to hatch under natural Ontario conditions; 8 hatchlings emerged September 27, 2011. A total of 2 eggs had dead, partially developed embryos and 4 eggs had no visible development.
- Female found nesting June 3, 2012 at same spot, nest depredated within 24 hours



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Summary of Nest Success

- 2 nests artificially incubated; 1 failed to develop
- 5 nests translocated, caged and left to hatch under natural Ontario conditions; all nests had good hatch success
- 2 nests left in-situ, caged and allowed to develop under natural Ontario conditions; both nests had good hatch success



What This Means?

- Sliders can survive multiple winters in Ontario
- Gaps between earliest and latest nesting events in the wild span many years. In these cases, captive copulation/sperm transfer prior to release is highly unlikely. Subsequently, it can be assumed that successful fertilization of eggs is occurring in the wild.
- Embryonic development in wild nests is occurring, resulting in successful hatching in Ontario
- Fertility and hatch success did not decrease over consecutive years
- Sliders can successfully produce two clutches of eggs in a single year in Ontario
- For most egg laying events recorded, timing is in sync with local native turtle species (late May to mid-July)
- Egg incubation period is similar to native turtle species

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DISEASE and COMPETITION

- With the release of Red-eared Sliders in Canada comes a threat to the health of native turtle species
- In captivity sliders may be kept with species from around the world and/or be kept in extremely unhygienic conditions, resulting in illness and disease
- Disease transmission to native turtles is a very real concern!
- Lessons can be learned from diseases now found in wild U.S. Box Turtles (*Terrapene*) and Tortoises (*Gopherus*); pathogens traced back to captive animals
- In Spain they found parasites transmitted from released red-eared sliders were transmitted to native turtle species.
- When released in large numbers they can negatively affect native turtles by outcompeting smaller species for habitat and food resources.

Future Steps?

- New information presented here should raise red flags on how we perceive the threat of Red-eared Sliders to our native turtles, and potentially other wildlife
- Red-eared Sliders are still sold as pets, often at a very low cost
- With continued sales, we are guaranteed continued releases into the wild
- Unlike many species that get released, sliders can survive our winters, can successfully reproduce and new releases pose a health risk to other turtles
- Steps should be taken to prevent further sales of this species in Canada, since it is inevitable that many will be released
- Dozens, and in some cases hundreds, of sliders can be found in Ontario and BC wetlands, suggesting there is no lack of source animals entering these systems
- Banning sales serves two purposes: 1) lessening the burden on the local environment and 2) educating the public about the threat of non-native pet release

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Sale/Import Banned in Other Areas

- British Columbia: several municipalities, such as Vancouver, Surrey, Richmond, Burnaby and Coquitlam have banned the sale of Red-eared Slider.
- Alberta has banned the sale of Red-eared Sliders
- In the USA, sale of sliders is banned in Florida, Massachusetts, Maine, Oregon, Washington, California, Indiana, Idaho, Ohio, and Missouri
- The European Union banned the import of Red-eared Sliders via the Protection of Species of Wild Fauna and Flora by Regulating Trade. While it is no longer allowed to import this subspecies from outside EU, trade within EU continues
- Banned in Australia

Proposed Provincial Legislation

For the purpose of the proposed act, Invasive species include plants, animals or other organisms (e.g., bacteria) that are not native to Ontario or a part of Ontario that have had, or that may have, negative impacts to the natural environment and associated economic and social benefits.

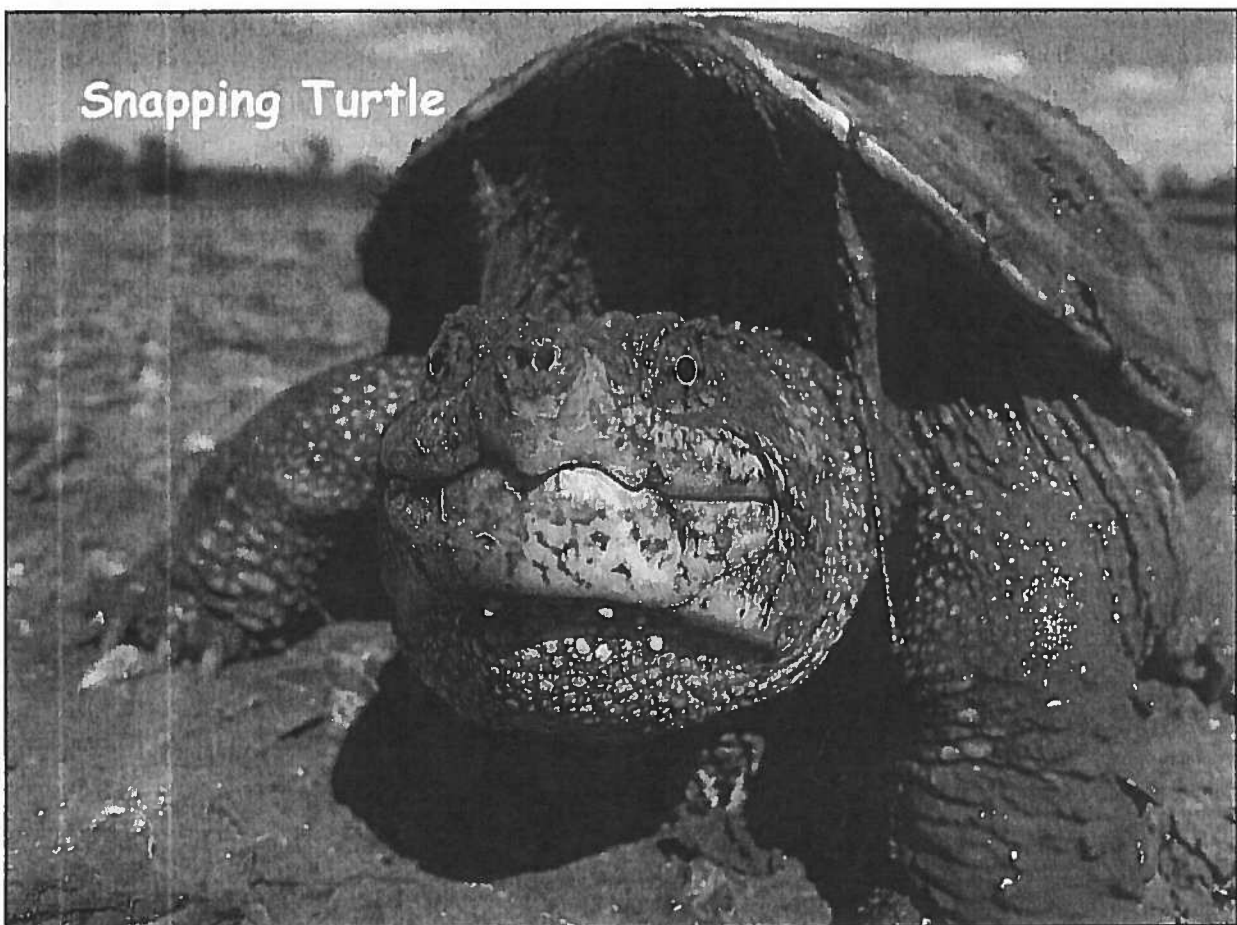
If passed, the proposed act would provide authority to:

- Enable the passage of regulations which would list Invasive species. Upon listing, a suite of restrictions would be applied to the species (e.g., illegal to possess, deposit, release, transport, buy, sell, lease, trade, and propagate the species).
- Enable, through the passage of regulations, restrictions on carriers of Invasive species. Carriers are things that harbour Invasive species and enable their movement and spread. Prohibitions for carriers would be determined on a case-by-case basis.
- Provide for exemptions from the prohibitions under certain circumstances (e.g., possession of an Invasive species for research, control, or educational purposes).
- Enable the minister to temporarily designate an Invasive species that poses a significant threat, in order to take immediate action. This provision would only be used where waiting to list the species in regulation would cause significant harm to the natural environment.
- Enable the ministry to undertake rapid response activities such as implementing control and eradication activities. These provisions would only be used in limited circumstances, and would be based on the scale of the threat and the potential impact to the natural environment and economy.
- Provisions are also included which enable the minister to prepare provincial Invasive species prevention and response plans for extremely high risk species, and enter into agreements.

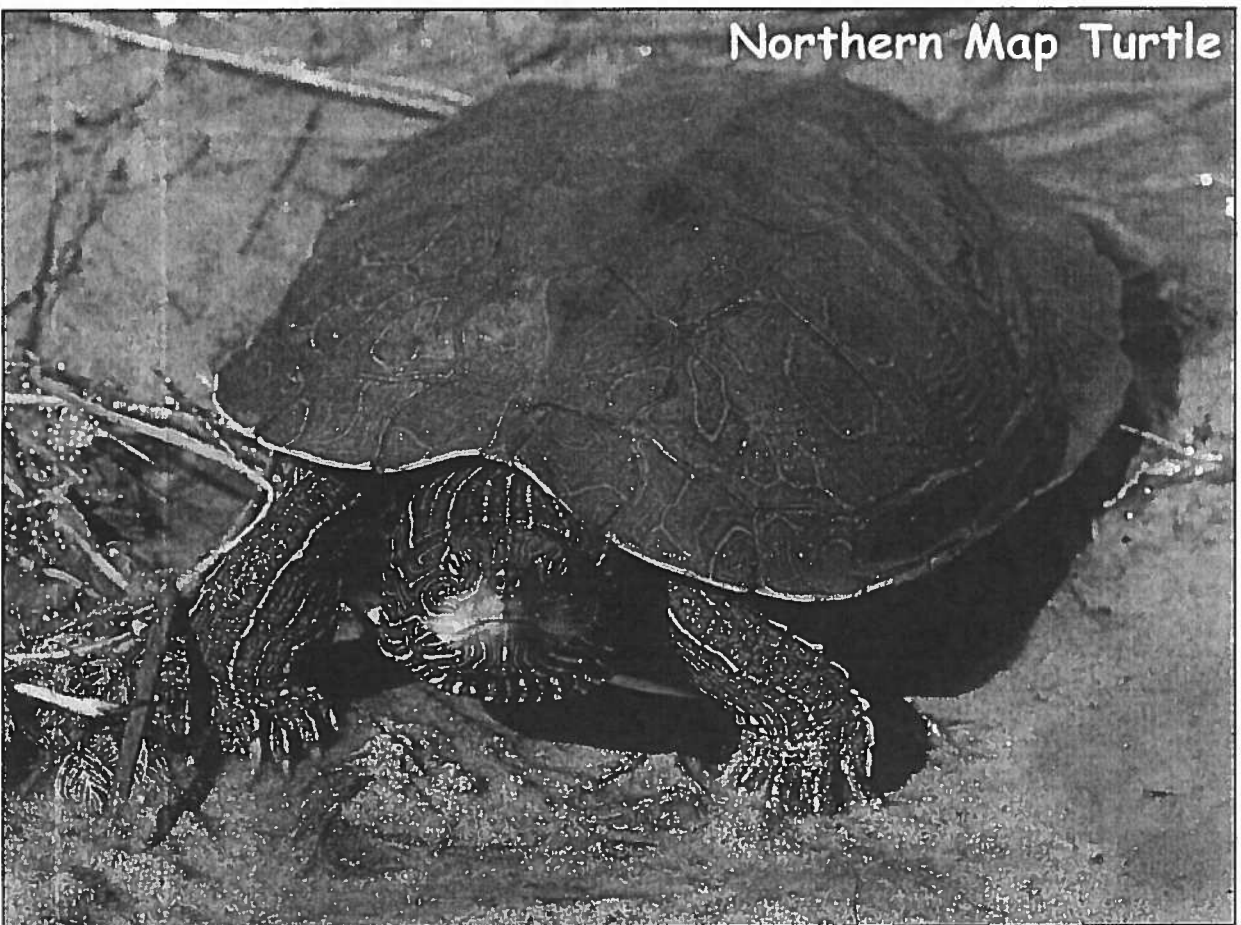
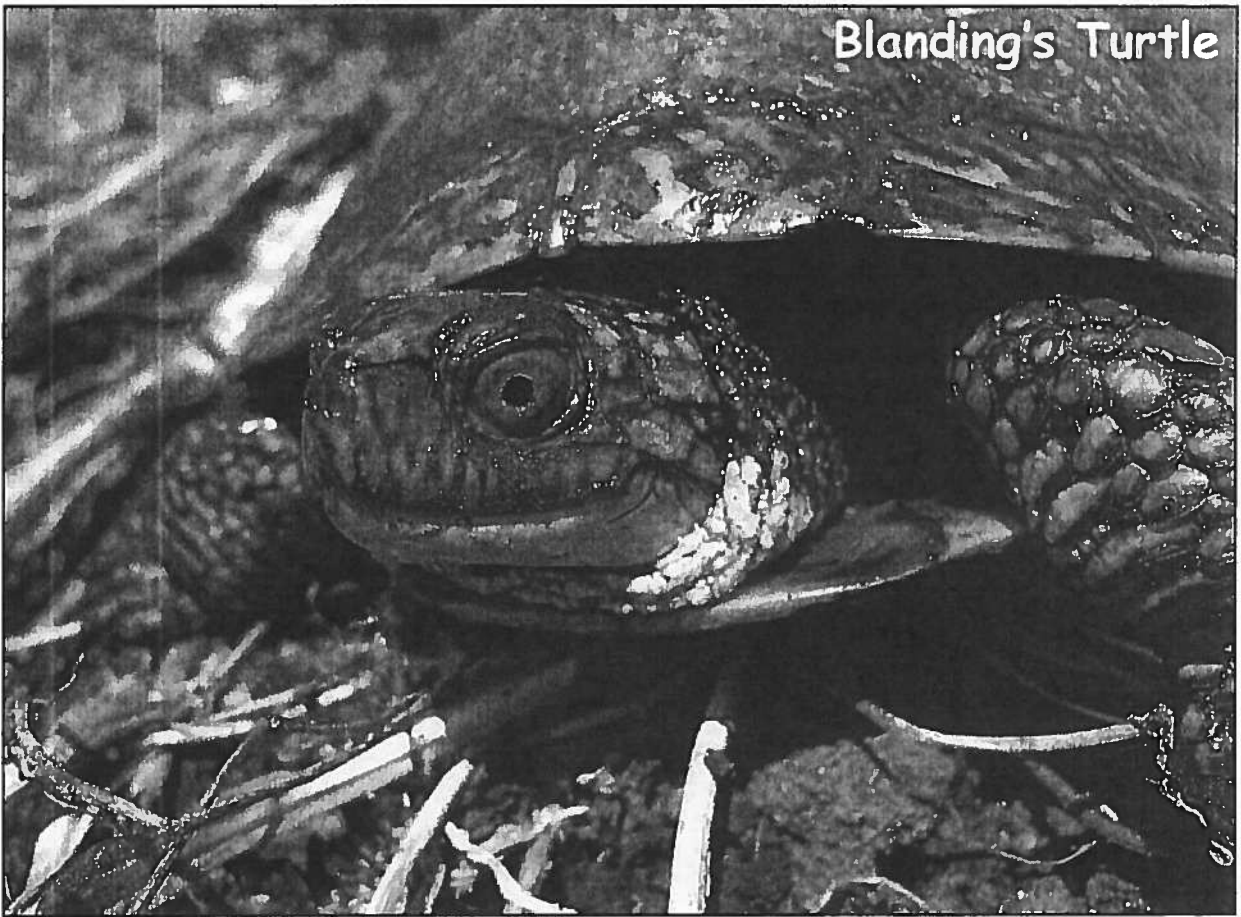
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City of London

- There is uncertainty about how current provincial legislation will deal with Red-eared Sliders
- The first study of its kind (the one discussed here) was based on Sliders within the City of London
- A proactive approach will influence other cities and the province to take a similar stand
- Leading by example may be an appropriate course of action, especially since this issue has been studied and recognized within the City of London
- The City of London is fortunate to have a large diversity of wildlife species and natural areas, many of which do not generally occur in urban centres. Protecting this natural heritage will benefit these species and London's residents over the long term



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Midland Painted Turtle



Spiny Softshell Turtle



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The Red-eared Slider Incredible Turtle, Wrong Country!

