Monitoring a created nesting site for eastern spiny softshell nesting activity in central New York, USA



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Overview

- The spiny softshell in New York
- History of the created nest site: 1996-2005
- Assessing nest site selection for 5 species of turtles 2006 present
- Preliminary results
- Future directions and considerations

Natural History The Spiny Softshell (*Apalone s. spinifera*) in NYS

Distribution

- •Allegheny River and tributaries
- •Finger Lakes
- •Embayments





www.dec.ny.gov

Status & Potential Threats

Species of Special Concern

- Shoreline development
- High levels of nest depredation ---skunks, raccoons, foxes.....
- Motor boat collisions



Habitat in Central NY

- Small bays and lakes
- Abundant aquatic vegetation
- Littoral zones





Nesting Sites

Barrier Beaches

Pebble beach

Driveway / road margin











Nest site Creation at a SE Lake Ontario Embayment

• 1993: High water levels destroyed nesting habitat NYS DEC & local biologist Jerry Czech

- 1994: Marina donated a corner
- 1995: Spread sandy soil / Erected fencing
- 1996: 1st nesting season / Erected ramps



Spiny Softshell Nesting Activity 1996-2005

Site Immediately Attracted Females

Site monitored during hatching – eggshells and eggs counted

Year	# Nests	#Eggs	#Hatched	# Failed Eggs	
1996	28	472	433	39	
1997	34	607	570	37	
1998	33	657	596	61	
1999	22	328	303	25	
2000	13	>28	>22	>6	
2001	18	333	294	39	
2002	32	-	-	No data	
2003	8	140	100	40	
2004	4	62	36	26	
2005	8	-	13	7 nests destroyed	
Total		>2627	>2367	90% Hatching Success	
				J. Czech, 1996-2005	

Other Species Using the Nest Site 1996-2005

K. Pusel

- Map Turtle (Graptemys geographica) 2-9 nests / year **
- Painted Turtle (Chrysemys picta) 1-6 nests / year **
- Snapping Turtle (Chelydra serpentina) 1-2 nests / year
- Musk Turtle (Sternotherus odoratus) 1 nest found



Nest Site Experiment 2006 - 2007



Pre

Research Question

Post

If given a mosaic of 3 nesting substrates – what / where will softshells choose?

Grid of 0.81 m² plots of 3 soil types (108 plots)

A. New soil: fine sand/gravel mix

B. Existing soil, no vegetation

C. Existing soil, with vegetation



Monitoring

- Daily during spring hatching / nesting season
- Weekly during fall hatching
- Wildlife camera
- Regular vegetation control
- Behavioral observations
- Location, distance to water, elevation, slope, clutch size, hatching success
- Eggs / shells identified



Spiny Softshell Nests 2006-2007

Year	# Nests	# Eggs	# Hatch	# Failed Eggs	% Success
2006	19	316	238	76	76%
2007	18	316	185	132	59%
Soil Type	A (no veg)	B (no veg)	C (veg)	Edge	A = old, no veg
2006	9	9	1	0	B = new, no veg
2007	2	16	0	0	C = veg (control)





Additional Nests 2006



Species	Year	1996-2005	# Nests
Painted	2006	1-6	21
Snapping	2006	1-2	7
Map	2006	2-9	40
Musk	2006	1	8

Nests by Soil Type

Species	Year	A no veg	B no veg	C veg	Edge	Edge Type
Painted	2006	8	3	10	0	
Snapping	2006	2	3	0	2	B/C, A/C
Map	2006	9	14	15	2	A/B
Musk	2006	0	0	7	1	A/B



Final 2007 data will be collected in spring 2008

Notes on Nesting Activity

Softshell nests were not distributed evenly across nest site

--- clumped at about 1 m elevation at south end of site



Stewardship Considerations

- Invasive vegetation
 - ----Requires seasonal to yearly maintenance
- Effective predator exclusion





 $\label{eq:Animals.nationalgeographic.com} Animals.nationalgeographic.com$

With nesting habitat becoming increasingly degraded or sparse it is important to consider multi-species studies and management plans

(95 nests of 5 sp in an 8 x 11 m artificial nest site)

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Questions?

