

New Jersey Department of Environmental Protection  
Division of Fish and Wildlife  
Endangered and Nongame Species Program

## **Species Status Review of Amphibian and Reptiles**

Final Report  
Including review by the  
NJ Endangered and Nongame Species Advisory Committee  
Conducted on January 7, 2016

Prepared by:  
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(as of July 2015, with NJDEP Division of Land Use Regulation, Endangered and Threatened Species Unit)

## **EXECUTIVE SUMMARY**

- Project Manager and compiler for this status review was Karena DiLeo, NJ DEP.
- The statuses of New Jersey’s native herpetofauna, comprising 74 amphibians and reptiles (Appendix I), were reviewed using the Delphi Technique. All indigenous, nongame and game amphibians and reptiles were reviewed, including two frog species recently discovered in New Jersey. After Round 1, the northern map turtle was added for review; this species was not originally included due to its unclear historical presence in NJ.
- Nine panelists participated in Rounds 1 and 2 and eight panelists continued into Rounds 3 and 4. Reviewers included experts from NJ Division of Fish and Wildlife and other government agencies, several New Jersey area academic institutions, and a private environmental consultant.
- Panelists were provided with information on each species including current status in NJ and across their range; federal aid (State Wildlife Grant) reports prepared by ENSP; NJ location data from the Biotics database; and results from ENSP surveys including disease screenings; Appendix III lists all reference materials. Initial information was provided to reviewers through a direct access link on the Conserve Wildlife Foundation of NJ (CWF-NJ) website. Additional materials provided by panelists were distributed via email at the beginning of each Round.
- Round 1 began on March 12, 2014 and the final round was completed on October 1, 2015. Appendix II contains all results from all rounds.
- Seventy-four species were reviewed and consensus was reached on 58 (below and in Table 1, p. 3-5):
  - 9 species were ranked Endangered.
    - Current E species whose rank proposed to change: none
    - One species currently ranked as T was recommended to be considered E (Atlantic Green Sea Turtle)
  - 7 species were ranked Threatened.
    - One current T species recommended to change to E (Atlantic Green Turtle)
    - Two species not currently listed as either E or T were recommended to be ranked as T (Northern Copperhead and Northern Scarlet Snake)
  - 11 species were ranked Special Concern.
  - 31 species were ranked Secure/Stable.
  - 1 species was ranked Unknown/Undetermined.
  - No species were ranked Not Applicable because they no longer occur in NJ.

- Fifteen species of the 74 species remained unresolved (non-consensus) after four rounds (see Appendix IV):
  - Eastern Wormsnake, *Carphophis amoenus amoenus*
  - Eastern Kingsnake, *Lampropeltis getula getula*
  - Smooth Greensnake, *Opheodrys vernalis*
  - Corn Snake, *Pantherophis guttatus*
  - Queen Snake, *Regina septemvittata*
  - Smooth Earthsnake, *Virginia valeriae*
  - Ground Skink, *Scincella lateralis*
  - Northern Map Turtle, *Graptemys geographica*
  - Eastern Mud Turtle, *Kinosternon subrubrum subrubrum*
  - Northern Diamondback Terrapin, *Malaclemys terrapin terrapin*
  - Green treefrog, *Hyla cinerea*
  - Southern Leopard frog, *Lithobates sphenoccephalus*
  - Atlantic Coast Leopard Frog, *Rana kauffeldi*
  - Spotted Salamander, *Ambystoma maculatum*
  - Eastern Mud Salamander, *Pseudotriton montanus montanus*
  
- These results were reviewed by ENSP staff and provided to the Endangered and Nongame Species Advisory Committee on January 7, 2016. The Committee made recommendations for adoption of the statuses reached by consensus of the Delphi Panel, as well as the statuses for 15 non-consensus species as noted in Appendix IV.

## RESULTS

**TABLE 1. DELPHI SPECIES STATUS REVIEW FINAL RESULTS (4 ROUNDS):  
AMPHIBIANS AND REPTILES.**

ORDER	SCIENTIFIC NAME	PRIMARY COMMON NAME	CURRENT NJ STATUS <sup>1</sup>	CONSENSUS ROUND #	CONFIDENCE LEVEL
<b><u>CONSENSUS STATUS = ENDANGERED</u></b>					
Caudata	<i>Ambystoma laterale</i>	Blue-spotted Salamander	E	2	5
Caudata	<i>Ambystoma tigrinum tigrinum</i>	Eastern Tiger Salamander	E	1	6.43
Squamata	<i>Crotalus horridus horridus</i>	Timber Rattlesnake	E	4	7
Testudines	<i>Caretta caretta</i>	Atlantic Loggerhead Turtle	E	1	6.6
Testudines	<i>Chelonia mydas</i>	Atlantic Green Turtle	T	3	6.57
Testudines	<i>Dermochelys coriacea</i>	Atlantic Leatherback Turtle	E	1	7.2
Testudines	<i>Eretmochelys imbricata</i>	Atlantic Hawksbill Turtle	E	1	6.8
Testudines	<i>Glyptemys muhlenbergii</i>	Bog Turtle	E	1	6.75
Testudines	<i>Lepidochelys kempii</i>	Kemp's Ridley Turtle	E	1	7.2
<b><u>CONSENSUS STATUS = THREATENED</u></b>					
Anura	<i>Hyla andersonii</i>	Pine Barrens Treefrog	T	2	6.29
Anura	<i>Hyla chrysoscelis</i>	Cope's Gray Treefrog	E	3	6
Caudata	<i>Eurycea longicauda longicauda</i>	Longtail Salamander	T	2	5.83
Squamata	<i>Agkistrodon contortrix mokasen</i>	Northern Copperhead	SC	4	5.71
Squamata	<i>Cemophora coccinea copei</i>	Northern Scarlet Snake	U	3	5.33
Squamata	<i>Pituophis melanoleucus melanoleucus</i>	Northern Pine Snake	T	2	7.13
Testudines	<i>Glyptemys insculpta</i>	Wood Turtle	T	2	6.29
<b><u>CONSENSUS STATUS = SPECIAL CONCERN</u></b>					
Anura	<i>Acris crepitans</i>	Northern Cricket Frog	S	4	5.84
Anura	<i>Lithobates virgatipes</i>	Carpenter Frog	SC	4	5.57
Anura	<i>Pseudacris kalmi</i>	New Jersey Chorus Frog	U	4	5.5
Anura	<i>Scaphiopus holbrookii</i>	Eastern Spadefoot	U	2	5.67
Caudata	<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	SC	2	5.14
Caudata	<i>Ambystoma opacum</i>	Marbled Salamander	SC	2	5.43

Caudata	<i>Gyrinophilus porphyriticus porphyriticus</i>	Northern Spring Salamander	SC	2	5
Squamata	<i>Heterodon platirhinos</i>	Eastern Hognose Snake	S	3	5.29
Squamata	<i>Opheodrys aestivus</i>	Rough Greensnake	S	3	5
Testudines	<i>Clemmys guttata</i>	Spotted Turtle	SC	3	5.43
Testudines	<i>Terrapene mbricat carolina</i>	Eastern Box Turtle	SC	3	6.29
<b>CONSENSUS STATUS = UNKNOWN/UNDETERMINED</b>					
Caudata	<i>Desmognathus ochrophaeus</i>	Allegheny Mountain Dusky Salamander	U	3	5.5
<b>CONSENSUS STATUS = SECURE/STABLE</b>					
Anura	<i>Anaxyrus americanus</i>	American Toad	S	1	6.8
Anura	<i>Anaxyrus fowleri</i>	Fowlers Toad	SC	2	6
Anura	<i>Hyla versicolor</i>	Northern Gray Treefrog	S	1	6.63
Anura	<i>Lithobates catesbeianus</i>	American Bullfrog	Game	1	7
Anura	<i>Lithobates clamitans</i>	Northern Green Frog	Game	1	7.13
Anura	<i>Lithobates palustris</i>	Pickerel Frog	S	1	6.5
Anura	<i>Lithobates sylvaticus</i>	Wood Frog	S	1	6.38
Anura	<i>Pseudacris crucifer</i>	Spring Peeper	S	1	7
Caudata	<i>Desmognathus fuscus fuscus</i>	Northern Dusky Salamander	S	1	6.14
Caudata	<i>Eurycea bislineata</i>	Northern Two-lined Salamander	S	1	6.29
Caudata	<i>Hemidactylum scutatum</i>	Four-Toed Salamander	U	4	5.14
Caudata	<i>Notophthalmus viridescens viridescens</i>	Red-spotted Newt	S	1	6
Caudata	<i>Plethodon cinereus</i>	Redback Salamander	S	1	6.75
Caudata	<i>Plethodon glutinosus</i>	Slimy Salamander	S	2	5.75
Caudata	<i>Pseudotriton ruber ruber</i>	Northern Red Salamander	S	1	6
Squamata	<i>Coluber constrictor constrictor</i>	Northern Black Racer	U	1	6.63
Squamata	<i>Diadophis punctatus edwardsii</i>	Northern Ring-neck Snake	S	1	5.17
Squamata	<i>Diadophis punctatus punctatus</i>	Southern Ring-neck Snake	S	1	5.5
Squamata	<i>Lampropeltis triangulum triangulum</i>	Eastern Milksnake	S	2	6
Squamata	<i>Nerodia sipedon sipedon</i>	Northern Watersnake	S	1	7.13
Squamata	<i>Pantherophis alleghaniensis</i>	Eastern Ratsnake	U	1	6.43

Squamata	<i>Plestiodon fasciatus</i>	Five-Lined Skink	U	4	5.43
Squamata	<i>Sceloporus undulatus hyacinthinus</i>	Northern Fence Lizard	S	1	7
Squamata	<i>Storeria dekayi</i>	Dekay's Brownsnake	S	1	5.5
Squamata	<i>Storeria occipitomaculata occipitomaculata</i>	Northern Red-bellied Snake	S	1	5.71
Squamata	<i>Thamnophis sauritus sauritus</i>	Eastern Ribbonsnake	S	1	6.14
Squamata	<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake	S	1	7.13
Testudines	<i>Chelydra serpentina</i>	Common Snapping Turtle	Game	1	6.67
Testudines	<i>Chrysemys picta picta</i>	Eastern Painted Turtle	S	1	6.78
Testudines	<i>Pseudemys rubriventris</i>	Northern Red-bellied Cooter	U	1	5.67
Testudines	<i>Sternotherus odoratus</i>	Eastern Musk Turtle	S	1	6.13
<b>NO CONSENSUS REACHED</b>					
Anura	<i>Hyla cinerea</i>	Green treefrog	none		
Anura	<i>Lithobates sphenoccephalus</i>	Southern Leopard Frog	S		
Anura	<i>Rana kauffeldi</i>	Atlantic Coast Leopard Frog	none		
Caudata	<i>Ambystoma maculatum</i>	Spotted Salamander	S		
Caudata	<i>Pseudotriton montanus montanus</i>	Eastern Mud Salamander	T		
Squamata	<i>Carphophis amoenus amoenus</i>	Eastern Wormsnake	U		
Squamata	<i>Lampropeltis getula getula</i>	Eastern Kingsnake	SC		
Squamata	<i>Opheodrys vernalis</i>	Smooth Greensnake	U		
Squamata	<i>Pantherophis guttatus</i>	Corn Snake	E		
Squamata	<i>Regina septemvittata</i>	Queen Snake	E		
Squamata	<i>Scincella lateralis</i>	Ground Skink	U		
Squamata	<i>Virginia valeriae</i>	Smooth Earthsnake	U		
Testudines	<i>Graptemys geographica</i>	Northern Map Turtle	none		
Testudines	<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle	S		
Testudines	<i>Malaclemys terrapin terrapin</i>	Northern Diamondback Terrapin	Marine Commercial spp.		

<sup>1</sup> Status codes: E=Endangered, T=Threatened, SC=Special Concern, S=Stable/Secure, U=Unknown/Undetermined

**TABLE 2. DELPHI SPECIES STATUS REVIEW FINAL RESULTS (4 ROUNDS):  
AMPHIBIANS AND REPTILES – LISTED TAXONOMICALLY.**

ORDER	SCIENTIFIC NAME	PRIMARY COMMON NAME	CURRENT NJ STATUS <sup>1</sup>	CONSENSUS ROUND #	CONSENSUS STATUS	CONFIDENCE LEVEL
Squamata	<i>Agkistrodon contortrix mokasen</i>	Northern Copperhead	SC	4	THREATENED	5.71
Squamata	<i>Carphophis amoenus amoenus</i>	Eastern Wormsnake	U	CONSENSUS NOT REACHED		
Squamata	<i>Cemophora coccinea copei</i>	Northern Scarlet Snake	U	3	THREATENED	5.33
Squamata	<i>Coluber constrictor constrictor</i>	Northern Black Racer	U	1	SECURE/STABLE	6.63
Squamata	<i>Crotalus horridus horridus</i>	Timber Rattlesnake	E	4	ENDANGERED	7.00
Squamata	<i>Diadophis punctatus edwardsii</i>	Northern Ring-neck Snake	S	1	SECURE/STABLE	5.17
Squamata	<i>Diadophis punctatus punctatus</i>	Southern Ring-neck Snake	S	1	SECURE/STABLE	5.50
Squamata	<i>Heterodon platirhinos</i>	Eastern Hognose Snake	S	3	SPECIAL CONCERN	5.29
Squamata	<i>Lampropeltis getula getula</i>	Eastern Kingsnake	SC	CONSENSUS NOT REACHED		
Squamata	<i>Lampropeltis triangulum triangulum</i>	Eastern Milksnake	S	2	SECURE/STABLE	6.00
Squamata	<i>Nerodia sipedon sipedon</i>	Northern Watersnake	S	1	SECURE/STABLE	7.13
Squamata	<i>Opheodrys aestivus</i>	Rough Greensnake	S	3	SPECIAL CONCERN	5.00
Squamata	<i>Opheodrys vernalis</i>	Smooth Greensnake	U	CONSENSUS NOT REACHED		
Squamata	<i>Pantherophis alleghaniensis</i>	Eastern Ratsnake	U	1	SECURE/STABLE	6.43
Squamata	<i>Pantherophis guttatus</i>	Corn Snake	E	CONSENSUS NOT REACHED		
Squamata	<i>Pituophis melanoleucus melanoleucus</i>	Northern Pine Snake	T	2	THREATENED	7.13
Squamata	<i>Regina septemvittata</i>	Queen Snake	E	CONSENSUS NOT REACHED		
Squamata	<i>Storeria dekayi</i>	Dekay's Brownsnake	S	1	SECURE/STABLE	5.50
Squamata	<i>Storeria occipitomaculata occipitomaculata</i>	Northern Red-bellied Snake	S	1	SECURE/STABLE	5.71

Squamata	<i>Thamnophis sauritus sauritus</i>	Eastern Ribbonsnake	S	1	SECURE/STABLE	6.14
Squamata	<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake	S	1	SECURE/STABLE	7.13
Squamata	<i>Virginia valeriae</i>	Smooth Earthsnake	U	CONSENSUS NOT REACHED		
Squamata	<i>Plestiodon fasciatus</i>	Five-Lined Skink	U	4	SECURE/STABLE	5.43
Squamata	<i>Sceloporus 8undulatus hyacinthinus</i>	Northern Fence Lizard	S	1	SECURE/STABLE	7.00
Squamata	<i>Scincella lateralis</i>	Ground Skink	U	CONSENSUS NOT REACHED		
Testudines	<i>Glyptemys muhlenbergii</i>	Bog Turtle	E	1	ENDANGERED	6.75
Testudines	<i>Chelydra 8serpentina</i>	Common Snapping Turtle	Game	1	SECURE/STABLE	6.67
Testudines	<i>Chrysemys picta picta</i>	Eastern Painted Turtle	S	1	SECURE/STABLE	6.78
Testudines	<i>Clemmys guttata</i>	Spotted Turtle	SC	3	SPECIAL CONCERN	5.43
Testudines	<i>Glyptemys insculpta</i>	Wood Turtle	T	2	THREATENED	6.29
Testudines	<i>Graptemys geographica</i>	Northern Map Turtle	none	CONSENSUS NOT REACHED		
Testudines	<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle	S	CONSENSUS NOT REACHED		
Testudines	<i>Malaclemys terrapin terrapin</i>	Northern Diamondback Terrapin	Marine Commercial Spp.	CONSENSUS NOT REACHED		
Testudines	<i>Pseudemys rubriventris</i>	Northern Red-bellied Cooter	U	1	SECURE/STABLE	5.67
Testudines	<i>Sternotherus odoratus</i>	Eastern Musk Turtle	S	1	SECURE/STABLE	6.13
Testudines	<i>Terrapene 8mbricat carolina</i>	Eastern Box Turtle	SC	3	SPECIAL CONCERN	6.29
Testudines	<i>Chelonia mydas</i>	Atlantic Green Turtle	T	3	ENDANGERED	6.57
Testudines	<i>Caretta caretta</i>	Atlantic Loggerhead Turtle	E	1	ENDANGERED	6.60
Testudines	<i>Dermochelys coriacea</i>	Atlantic Leatherback Turtle	E	1	ENDANGERED	7.20
Testudines	<i>Eretmochelys imbricata</i>	Atlantic Hawksbill Turtle	E	1	ENDANGERED	6.80



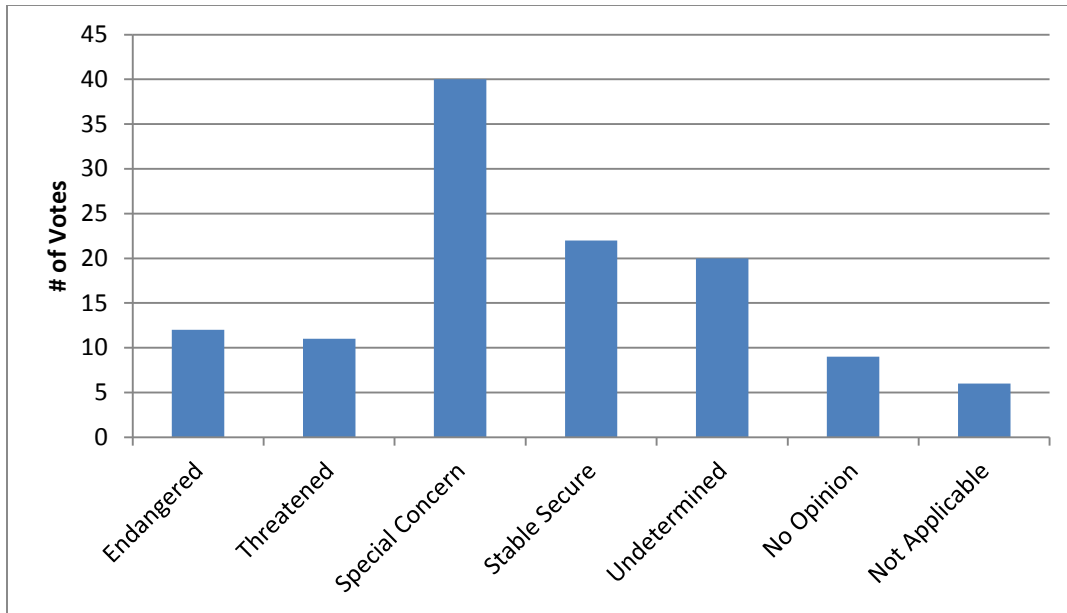
Testudines	<i>Lepidochelys kempii</i>	Kemp's Ridley Turtle	E	1	ENDANGERED	7.20
Anura	<i>Acris crepitans</i>	Northern Cricket Frog	S	4	SPECIAL CONCERN	5.84
Anura	<i>Anaxyrus americanus</i>	American Toad	S	1	SECURE/STABLE	6.80
Anura	<i>Anaxyrus fowleri</i>	Fowlers Toad	SC	2	SECURE/STABLE	6.00
Anura	<i>Hyla andersonii</i>	Pine Barrens Treefrog	T	2	THREATENED	6.29
Anura	<i>Hyla chrysoscelis</i>	Cope's Gray Treefrog	E	3	THREATENED	6.00
Anura	<i>Hyla cinerea</i>	Green treefrog	none	CONSENSUS NOT REACHED		
Anura	<i>Hyla versicolor</i>	Northern Gray Treefrog	S	1	SECURE/STABLE	6.63
Anura	<i>Lithobates catesbeianus</i>	American Bullfrog	Game	1	SECURE/STABLE	7.00
Anura	<i>Lithobates clamitans</i>	Northern Green Frog	Game	1	SECURE/STABLE	7.13
Anura	<i>Lithobates palustris</i>	Pickerel Frog	S	1	SECURE/STABLE	6.50
Anura	<i>Lithobates sphenoccephalus</i>	Southern Leopard Frog	S	CONSENSUS NOT REACHED		
Anura	<i>Lithobates sylvaticus</i>	Wood Frog	S	1	SECURE/STABLE	6.38
Anura	<i>Lithobates virgatipes</i>	Carpenter Frog	SC	4	SPECIAL CONCERN	5.57
Anura	<i>Pseudacris crucifer</i>	Spring Peeper	S	1	SECURE/STABLE	7.00
Anura	<i>Pseudacris kalmi</i>	New Jersey Chorus Frog	U	4	SPECIAL CONCERN	5.50
Anura	<i>Rana kauffeldi</i>	Atlantic Coast Leopard Frog	none	CONSENSUS NOT REACHED		
Anura	<i>Scaphiopus holbrookii</i>	Eastern Spadefoot	U	2	SPECIAL CONCERN	5.67
Caudata	<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	SC	2	SPECIAL CONCERN	5.14
Caudata	<i>Ambystoma laterale</i>	Blue-spotted Salamander	E	2	ENDANGERED	5.00
Caudata	<i>Ambystoma maculatum</i>	Spotted Salamander	S	CONSENSUS NOT REACHED		
Caudata	<i>Ambystoma opacum</i>	Marbled Salamander	SC	2	SPECIAL CONCERN	5.43

Caudata	<i>Ambystoma tigrinum tigrinum</i>	Eastern Tiger Salamander	E	1	ENDANGERED	6.43
Caudata	<i>Desmognathus fuscus fuscus</i>	Northern Dusky Salamander	S	1	SECURE/STABLE	6.14
Caudata	<i>Desmognathus ochrophaeus</i>	Allegheny Mountain Dusky Salamander	U	3	UNDETERMINED	5.50
Caudata	<i>Eurycea bislineata</i>	Northern Two-lined Salamander	S	1	SECURE/STABLE	6.29
Caudata	<i>Eurycea longicauda longicauda</i>	Longtail Salamander	T	2	THREATENED	5.83
Caudata	<i>Gyrinophilus porphyriticus porphyriticus</i>	Northern Spring Salamander	SC	2	SPECIAL CONCERN	5.00
Caudata	<i>Hemidactylium scutatum</i>	Four-Toed Salamander	U	4	SECURE/STABLE	5.14
Caudata	<i>Notophthalmus viridescens viridescens</i>	Red-spotted Newt	S	1	SECURE/STABLE	6.00
Caudata	<i>Plethodon cinereus</i>	Redback Salamander	S	1	SECURE/STABLE	6.75
Caudata	<i>Plethodon glutinosus</i>	Slimy Salamander	S	2	SECURE/STABLE	5.75
Caudata	<i>Pseudotriton montanus montanus</i>	Eastern Mud Salamander	T	CONSENSUS NOT REACHED		
Caudata	<i>Pseudotriton ruber ruber</i>	Northern Red Salamander	S	1	SECURE/STABLE	6.00

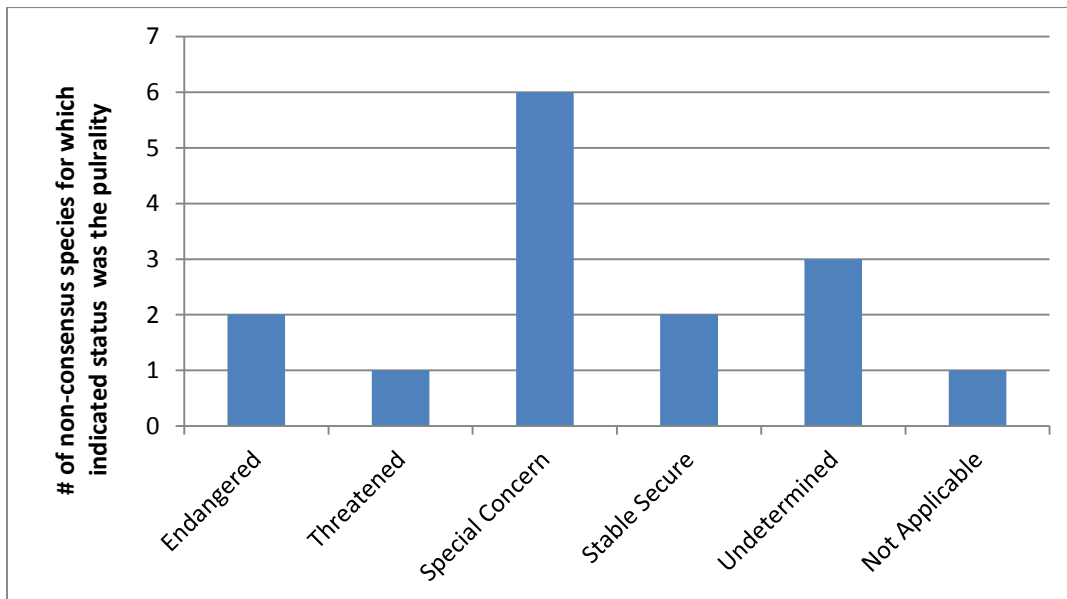
<sup>1</sup> Status codes: E=Endangered, T=Threatened, SC=Special Concern, S=Stable/Secure, U=Unknown/Undetermined

**Table 3: Round 1 and Final (round 4) results: summary**

<b>Consensus Status</b>	<b>Round 1 Findings</b>		<b>Final Results (Round 4)</b>			
	<b>Species Count</b>	<b>% of reviewed spp.</b>	<b>% of consensus spp.</b>	<b>Species Count</b>	<b>% of reviewed spp.</b>	<b>% of consensus spp.</b>
<b>Endangered</b>	6	8%	18%	9	12%	15%
<b>Threatened</b>	1	1%	3%	7	9%	12%
<b>Special Concern</b>	0	0%	0%	11	15%	19%
<b>Stable Secure</b>	26	35%	79%	31	42%	53%
<b>Undetermined</b>	0	0%	0%	1	1%	2%
<b>Not Applicable</b>	0	0%	0%	0	0%	0%
<b>Consensus Spp.</b>	33	45%		59	80%	
<b>Non-consensus Spp.</b>	41	55%		15	20%	



**Figure 1: Round 4 vote tally by status across all non-consensus species.**



**Figure 2: Plurality status votes for non-consensus species.**

APPENDIX I: LIST OF SPECIES REVIEWED WITH NJ STATUS, NJ AND GLOBAL BIOTICS RANK, IUCN STATUS,  
SURROUNDING STATE STATUS AND NEPARC “REGIONAL RESPONSIBILITY” RANK

SCIENTIFIC NAME	PRIMARY COMMON NAME	NJ STATUS	NJ STATE RANK	GLOBAL RANK	US ESA	IUCN	STATUS IN SURROUNDING STATES	NEPARC Regional Responsibility <sup>2</sup>
<i>Agkistrodon contortrix mokasen</i>	Northern Copperhead	SC	S3	G5		Least Concern	CT(S3), DE(S1), MD(S5), NY(S3), PA(S3S4)	HIGH
<i>Carphophis amoenus amoenus</i>	Eastern Wormsnake		S5	G5		Least Concern	CT(S4), DE(S5), MD(S5), NY(S2), PA(S3)	MODERATE
<i>Cemophora coccinea copei</i>	Northern Scarlet Snake		SU	G5		Least Concern	DE(SH), MD(S3)	SEVERE
<i>Coluber constrictor constrictor</i>	Northern Black Racer		SNR	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S4), PA(S5)	HIGH
<i>Crotalus horridus horridus</i>	Timber Rattlesnake	E	S1	G4		Least Concern	CT(S1), MD(S3), NY(S3), PA(S3S4)	SEVERE
<i>Diadophis punctatus edwardsii</i>	Northern Ring-neck Snake		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	MODERATE
<i>Diadophis punctatus punctatus</i>	Southern Ring-neck Snake		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Heterodon platirhinos</i>	Eastern Hognose Snake		S5	G5		Least Concern	DE(S4), MD(S5), NY(S3), PA(S3)	SEVERE
<i>Lampropeltis getula getula</i>	Eastern Kingsnake	SC	S3	G5		Least Concern	DE(S2S3), MD(S5)	MODERATE
<i>Lampropeltis triangulum triangulum</i>	Eastern Milksnake		S3	G5		--	CT(S5), DE(S1), MD(S5) NY(S5), PA(S5)	LOW
<i>Nerodia sipedon sipedon</i>	Northern Watersnake		S5	G5		Least Concern	CT(S5), DE(S5), NY(S5), PA (S5)	LOW
<i>Opheodrys aestivus</i>	Rough Greensnake		S5	G5		Least Concern	DE(S2), MD(S5), PA(S1)	HIGH
<i>Opheodrys vernalis</i>	Smooth Greensnake		S3	G5		--	CT(S3S4), MD(S5), NY(S4), PA(S3S4)	HIGH
<i>Pantherophis alleghaniensis</i>	Eastern Ratsnake		SNR	G5		--	CT(S4), DE(S5), MD(S5), PA(S5)	MODERATE
<i>Pantherophis guttatus</i>	Corn Snake	E	S1	G5		Least Concern	DE(S1), MD(S4)	SEVERE
<i>Pituophis melanoleucus melanoleucus</i>	Northern Pine Snake	T	S2	G4		Least Concern	MD(SH)	LOW
<i>Regina septemvittata</i>	Queen Snake	E	S1	G5		Least Concern	DE(S1), MD(S5), NY(S1), PA(S3)	SEVERE
<i>Storeria dekayi</i>	Dekay's Brownsnake		SNR	G5		Least Concern	CT(S5), DE(S3), MD(S5), NY(S5), PA(S5)	MODERATE

SCIENTIFIC NAME	PRIMARY COMMON NAME	NJ STATUS	NJ STATE RANK	GLOBAL RANK	US ESA	IUCN	STATUS IN SURROUNDING STATES	NEPARC Regional Responsibility <sup>2</sup>
<i>Storeria occipitomaculata occipitomaculata</i>	Northern Red-bellied Snake		S5	G5		Least Concern	CT(S4), DE(S1), MD(S5), NY(S5), PA(S5)	LOW
<i>Thamnophis sauritus sauritus</i>	Eastern Ribbonsnake		S5	G5		Least Concern	CT(S3S4), DE(S2), MD(S5), NY(S4), PA(S3)	SEVERE
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Virginia valeriae</i>	Smooth Earthsnake		SU	G5		Least Concern	DE(S1), MD(S4S5), PA(SH)	MODERATE
<i>Plestiodon fasciatus</i>	Five-Lined Skink		SU	G5		Least Concern	CT(S1), DE(S5), MD(S5), NY(S3), PA(S4)	MODERATE
<i>Sceloporus undulatus hyacinthinus</i>	Northern Fence Lizard		SNR	G5		Least Concern	DE(S5), MD(S5), NY(S1), PA(S3S4)	MODERATE
<i>Scincella lateralis</i>	Ground Skink		S4	G5		Least Concern	DE (S1), MD(S5)	MODERATE
<i>Glyptemys muhlenbergii</i>	Bog Turtle	E	S1	G3	LT	Endangered	CT(S1), DE(S1), MD (S2), NY(S2), PA(S2)	SEVERE
<i>Chelydra serpentina serpentina</i>	Common Snapping Turtle		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Chrysemys picta picta</i>	Eastern Painted Turtle		SNR	G5		--	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	MODERATE
<i>Clemmys guttata</i>	Spotted Turtle	SC	S3	G5		Endangered	CT (S4), DE (S3), MD (S5), NY (S3), PA(S3)	SEVERE
<i>Glyptemys insculpta</i>	Wood Turtle	T	S2	G3		Vulnerable	CT(S3), MD(S4), NY(S3), PA(S3S4),	SEVERE
<i>Graptemys geographica</i>	Northern Map Turtle	none	SNA	G5		Least Concern	MD(S1), NY(S3), PA(S4)	HIGH
<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle		S5	G5		Least Concern	DE(S5), MD(S5), NY(S1), PA(S1)	MODERATE
<i>Malaclemys terrapin terrapin</i>	Northern Diamondback Terrapin		S3	G4		Near Threatened	CT(S3), DE(SU), MD(S4)	SEVERE
<i>Pseudemys rubriventris</i>	Northern Red-bellied Cooter		S4	G5		Near Threatened	DE(S5), MD(S5), NY(SNA), PA(S2S3),	HIGH
<i>Sternotherus odoratus</i>	Eastern Musk Turtle		S5	G5		Least Concern	CT(S4), DE (S5), MD(S5), NY(S5), PA(S4)	LOW
<i>Terrapene carolina carolina</i>	Eastern Box Turtle	SC	S3	G5		Vulnerable	CT(S4), DE(S5), MD(S5), NY(S3), PA(S3S4)	SEVERE

SCIENTIFIC NAME	PRIMARY COMMON NAME	NJ STATUS	NJ STATE RANK	GLOBAL RANK	US ESA	IUCN	STATUS IN SURROUNDING STATES	NEPARC Regional Responsibility <sup>2</sup>
<i>Chelonia mydas</i>	Atlantic Green Turtle	T	S1	G3	LE	Endangered	CT(SNA), DE(SNA), MD(S1N), NY(S1N)	SEVERE
<i>Caretta caretta</i>	Atlantic Loggerhead Turtle	E	S1	G3	LE, LT	Endangered	CT(SNA), DE(SNA), MD (S1B,S1N), NY (S1N)	SEVERE
<i>Dermochelys coriacea</i>	Atlantic Leatherback Turtle	E	S1	G2	LE, LT	Critically Endangered	CT(SNA), DE(SNA), MD(S1), NY(S1N),	SEVERE
<i>Eretmochelys imbricata</i>	Atlantic Hawksbill Turtle	E	S1	G3	LE	Critically Endangered	DE(SNR)	SEVERE
<i>Lepidochelys kempii</i>	Kemp's Ridley Turtle	E	S1	G1	LE	Critically Endangered	CT(SNA), DE(SNA), MD(S1N), NY(S1N)	SEVERE
<i>Acris crepitans</i>	Northern Cricket Frog		S4	G5		Least Concern	DE(S5), MD(S5), NY(S1), PA(S1)	HIGH
<i>Anaxyrus americanus</i>	American Toad		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Anaxyrus fowleri</i>	Fowlers Toad	SC	S3	G5		Least Concern	CT(S4), DE(S5), MD(S5), NY(S4), PA(S3S4)	HIGH
<i>Hyla andersonii</i>	Pine Barrens Treefrog	T	S2	G4		Near Threatened	n/a	LOW
<i>Hyla chrysoscelis</i>	Cope's Gray Treefrog	E	S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	MODERATE
<i>Hyla cinerea</i>	Green treefrog		n/a	G5		Least Concern	DE (S3), MD (S5)	LOW
<i>Hyla versicolor</i>	Northern Gray Treefrog		S5	G5		Least Concern	CT(S5), DE(S4), NY(S5), PA(S4)	LOW
<i>Lithobates catesbeianus</i>	American Bullfrog		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Lithobates clamitans</i>	Northern Green Frog		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Lithobates palustris</i>	Pickerel Frog		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Lithobates sphenoccephalus</i>	Southern Leopard Frog		S5	G5		Least Concern	DE(S5), MD(S4S5), NY(S1S2), PA(S1)	MODERATE
<i>Lithobates sylvaticus</i>	Wood Frog		S5	G5		Least Concern	CT(S4), DE(S4), MD(S5), NY(S5), PA(S5)	LOW
<i>Lithobates virgatipes</i>	Carpenter Frog	SC	S3	G4		Least Concern	Delaware (S1), Maryland (S3)	SEVERE

SCIENTIFIC NAME	PRIMARY COMMON NAME	NJ STATUS	NJ STATE RANK	GLOBAL RANK	US ESA	IUCN	STATUS IN SURROUNDING STATES	NEPARC Regional Responsibility <sup>2</sup>
<i>Pseudacris crucifer</i>	Spring Peeper		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	LOW
<i>Pseudacris kalmi</i>	New Jersey Chorus Frog		SU	G4		Least Concern	DE(S4), MD(S4), PA(S1)	HIGH
<i>Rana</i> sp nov. <sup>3</sup>	Leopard frog nov.	n/a	n/a	n/a		n/a	n/a	n/a
<i>Scaphiopus holbrookii</i>	Eastern Spadefoot		SNR	G5		Least Concern	CT(S1), DE(S4), MD(S4), NY(S2S3), PA(S1)	SEVERE
<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	SC	S3	G4		Least Concern	CT(S3), MD(S3), NY(S4), PA(S3S4)	SEVERE
<i>Ambystoma laterale</i>	Blue-spotted Salamander	E	S1	G5		Least Concern	CT(S1), NY(S4), PA(S1)	SEVERE
<i>Ambystoma maculatum</i>	Spotted Salamander		S4	G5		Least Concern	CT(S5), DE(S2), MD(S5), NY (S5), PA(S5)	MODERATE
<i>Ambystoma opacum</i>	Marbled Salamander	SC	S3	G5		Least Concern	CT(S4), DE(S3), MD(S5), NY(S3), PA(S3S4)	HIGH
<i>Ambystoma tigrinum tigrinum</i>	Eastern Tiger Salamander	E	S1	G5		Least Concern	DE(S1), MD(S2), NY(S1S2), PA(SX)	SEVERE
<i>Desmognathus fuscus fuscus</i>	Northern Dusky Salamander		SNR	G5		Least Concern	CT(S4), DE(S5), MD(S5), NY (S5), PA(S5)	MODERATE
<i>Desmognathus ochrophaeus</i>	Allegheny Mountain Dusky Salamander		SH	G5		Least Concern	MD(S5), NY(S5), PA(S5)	MODERATE
<i>Eurycea bislineata</i>	Northern Two-lined Salamander		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5)	MODERATE
<i>Eurycea longicauda longicauda</i>	Longtail Salamander	T	S2	G5		Least Concern	DE(S1), MD(S5), NY(S2S3), PA(S5)	HIGH
<i>Gyrinophilus porphyriticus porphyriticus</i>	Northern Spring Salamander	SC	S3	G5		Least Concern	CT(S2), MD(S4), NY(S5), PA(S5)	MODERATE
<i>Hemidactylium scutatum</i>	Four-Toed Salamander		SU	G5		Least Concern	CT(S4), DE(S1), MD(S5), NY(S5), PA(S4)	MODERATE
<i>Notopthalmus viridescens viridescens</i>	Red-spotted Newt		S5	G5		Least Concern	CT(S5), DE(S4), MD(S5), NY (S5), PA(S5)	LOW
<i>Plethodon cinereus</i>	Red-backed Salamander		S5	G5		Least Concern	CT(S5), DE(S5), MD(S5), NY(S5), PA(S5),	LOW
<i>Plethodon glutinosus</i>	Slimy Salamander		S5	G5		Least Concern	CT(S2), MD(S5), NY(S5), PA(S5),	MODERATE



SCIENTIFIC NAME	PRIMARY COMMON NAME	NJ STATUS	NJ STATE RANK	GLOBAL RANK	US ESA	IUCN	STATUS IN SURROUNDING STATES	NEPARC Regional Responsibility <sup>2</sup>
<i>Pseudotriton montanus montanus</i>	Eastern Mud Salamander	T	SNR	G5		Least Concern	DE(SNR), MD(S2?), PA(S1)	SEVERE
<i>Pseudotriton ruber ruber</i>	Northern Red Salamander		SNR	G5		Least Concern	DE(S3), MD(S5), NY(S3S4),PA(S5)	HIGH

<sup>1</sup> NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: November 19, 2013 ).

<sup>2</sup> NEPARC. 2010. Northeast Amphibian and Reptile Species of Regional Responsibility and Conservation Concern. Northeast Partners in Amphibian and Reptile Conservation (NEPARC). Publication 2010-1.

<sup>3</sup> *Rana nov.* was not officially named until after this review had been initiated. Its name was assigned as *Rana kauffeldi*, the Atlantic Coast Leopard Frog (Newman 2012).

RANKING TERMS USED IN APPENDIX I			
NJ STATUS	STATE/GLOBAL RANK		US Endangered Species Act (ESA)
E- Endangered	S/G1- Critically imperiled	S/GNR- Not ranked	LT- Listed threatened
T- Threatened	S/G2- Imperiled	S/GX- Presumed extirpated	LT-Listed endangered
SC-Special Concern	S/G3- Vulnerable	S/GH- Possibly extirpated	
	S/G4- Apparently secure	S/GU- Unrankable (lack of data)	
	S/G5- Secure	G#G#- Range of uncertainty	
	S/GNA- Not applicable	G#T#- Intraspecific taxon	

## APPENDIX II: DELPHI FINAL (ROUND 4) VOTING AND ROUND COMMENTS

### NORTHERN COPPERHEAD (*Agkistrodon contortrix mokasen*)

STATUS	E	T	SC	S	U	NO	NA
ROUND: 4	CONSENSUS: <b>YES-Threatened</b>						
# VOTES		7				1	
Avg. CONFIDENCE		5.7					

#### ROUND 1:

- Populations throughout the N. Copperhead's southern extent in NJ and Palisades are isolated/island populations surrounded by development and/or infrastructure, limiting interaction with other populations and likely increasing wanton and/or accidental killing. Populations within conserved, contiguous tracks face a number of threats including the most recent addition, snake fungal dermatitis/disease (T)
- Isolated, small populations. Habitat fragmented. Habitat loss, roads, and persecution are threats (T)
- More surveys are needed, including radio-tracking studies to determine habitat use and home range size (SC)
- Probably, more widespread than realized. We have seen them in the Sourland Mt. area, as well as northwestern NJ (SC)
- Observations are lacking and it is not indicated whether or not the increase in new observations is due to a recent surge in survey efforts. Although currently listed as special concern, a status of undetermined would be more appropriate because there is really not enough information to determine whether it's inherently vulnerable, likely to become threatened, or what any potential threats might be (U)

#### ROUND 2:

- Isolated, small populations (T)
- Special concern does not give Copperheads any legal protection to individuals or habitats. Copperheads have declining drastically and merit protection and more research (T)
- Isolated, small populations. Habitat fragmented. Habitat loss, roads, and persecution are threats (T)
- The Northern Copperhead faces the same threats as the Timber Rattlesnake. Although radio-telemetry data would provide additional insight into this species' range and habitat use, work conducted in Connecticut (Charles Smith) and Pennsylvania (Phillip Dunning) have provided NJ with some guidance pertaining to these matters (as described in Landscape Map's SOA model justifications). Their ranges appear to be smaller than rattlesnakes and, consistent with H. Reinert's findings, C. Smith had reported they preferred more open habitats rather than interior forests. Although observations may have increased in more recent years, regardless if they were due to targeted surveys or educational outreach, the snakes have been found in isolated areas within their southern and Palisades ranges. As such, these populations are genetically isolated due to the geographic isolation and limited dispersal distances, and due to the surrounding development and infrastructure; there is no possibility of reconnecting these populations. As such, they will over time breed out. In addition, the proximity to human activity potentially increases the threat of road kills and wanton killings. It seems the strongholds for this species, and NJ's dependence on their continued persistence, remains within the Kittatinnies and preserved lands of the Highlands Region. This limited range within the state to depend on their persistence and the threats they face seem to warrant a "T" listing (T)
- The mapped locations and round-one comments indicate the species is somewhat limited in distribution and perhaps isolated. In the snake assessment report, the absence of road kills and low number of other threats hints at very low population numbers, a general lack of movement/cryptic nature, or lack of desire to cross roads, especially compared to other large snake species that are mobile and obvious and with more reported road kills. Almost all of the data provided on copperheads is relatively recent, which shows that there is still a lot to learn about this species in NJ. Based on the definitions provided, the current status of special concern seems to be the most appropriate for this species (SC).

#### ROUND 3:

- Copperheads have declined throughout their range in NJ and their critical habitat needs protection (T)
- Copperheads rarely encountered, limited range. Don't know whether decreasing, But clearly vulnerable to human disturbance, "heroic" killings, and roadkills. Deserves radiotelemetry study. Isolated populations vulnerable to extinction, so could well become endangered in foreseeable future, hence threatened today (T)
- Isolated, small populations. Habitat fragmented. Habitat loss, roads, and persecution are threats. All threats remain. My assessment of this species stays the same as before and will not change no matter how many rounds we go through (T)
- As per previous justifications, this species long-term persistence in NJ is within the conserved lands of the Kittatinny Mountains and Highlands Region. All other populations are isolated with no opportunity for connectivity due to development, infrastructure and distance between remaining populations. The isolation and likely, future decline, of the species within its northeastern and "southerly" portions of its NJ range demonstrates a significant loss of its range within NJ. Although conserved lands in the north provide secure areas, development and infrastructure surrounds these lands, limiting if not eliminating opportunities for genetic exchange and/or range expansion. As such, it would be appropriate for this species to be listed as threatened (T).
- Based on the definitions provided, the current status of special concern seems to be the most appropriate for this species (SC).

#### ROUND 4:

- A rare species with a limited range in a fragmented habitat, and one that is also targeted for persecution, deserves the protection of a Threatened status. Threatened species also deserve monitoring as well as public education to diminish hostile encounters with people (T)
- Limited geographically. Based on previous comments, this species seems to be becoming more geographically isolated, thus threatened may be a better designation. (T)
- This species merits the threatened status. It has a limited distribution, it is declining in NJ, and its biology is poorly known. Funding is needed to conduct intensive research on the copperhead! (T)

**EASTERN WORMSNAKE (*Carphophis amoenus amoenus*)**

ROUND: 4

CONSENSUS: NO

STATUS	E	T	SC	S	U	NO	NA
# VOTES			4	2	2		
Avg. CONFIDENCE			4.5	5.5	5.5		

*ROUND 1:*

- Uncommon, spotty distribution (SC)
- Worm snakes have a wide distribution in the Pine Barrens but scattered distribution in northern NJ (S)
- Fossorial, so infrequently encountered (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (U)
- Not enough information to go on. Wormsnakes are pretty common in the Pines, but also occur in other parts of NJ and there hasn't been an effort to sample to see what the central and northern distributions are currently, and I there's a way to compare the results to previous range (U)

*ROUND 2:*

- Uncommon, spotty distribution in Pinelands. Threatened by all the things that threaten the existence of all Pinelands species--habitat loss and fragmentation, roads, collecting (SC)
- Common in Pine Barrens (S)
- Round-one comments did not help with assigning a status. To me, there is clearly not enough information on which to make a status assessment (U).
- While the species can be found with a fair amount of regularity in the Pines, there are limited observations in the northern part of the state. It's hard to know if the lack of northern sightings are due to rarity or just the difficulty in surveying for this species. Until additional assessment is completed in the north the status should be Unknown (U).

*ROUND 3:*

- Although there is limited information regarding this species in the northern region and there appears to be conflicting information regarding its status within the Pinelands (per Round 2 comments), the Pinelands snakes (all species) must contend with the same threats (e.g., habitat loss and fragmentation by development and infrastructure, illegal collection and currently, a lack of habitat management). As such, it may be more appropriate to list this species as special concern (SC) given the likelihood of impacts to the population in the Pinelands even though we're lacking information for the north. (SC)
- Uncommon, spotty distribution in Pinelands. Threatened by all the things that threaten the existence of all Pinelands species – habitat loss and fragmentation, roads, collecting (SC)
- This is a common species in NJ, in areas of suitable habitat (S)
- Very little known about this species. No basis for assuming that it is stable. Could be vulnerable to invasive species. Need data from systematic surveys over time. (U)
- No information has been provided by the ENSP staff or the reviewers for this species. There has been no evidence of decline in numbers, no evidence of an increase in abundance, no mapped locations given, no natural history or habitat information provided, and no evidence of any specific threats (except the constant and erroneous comment that all Pinelands species are threatened by habitat loss, fragmentation, roads, and collecting). There is clearly not enough information to make a status assessment for this species (U).

*ROUND 4:*

- True, there is little known about this secretive species, but what is known supports SC. It is good to know that it is common somewhere. More systematic surveys would be important for this and many other species. [SC]
- Fairly abundant in the Pine Barrens and occurs in the Highlands, but is less common in the Northern part of NJ (S)
- No information has been provided by the ENSP staff or the reviewers for this species. There has been no evidence of decline in numbers, no evidence of an increase in abundance, no mapped locations given, no natural history or habitat information provided, and no evidence of any specific threats (except the constant and erroneous comment that all Pinelands species are threatened by habitat loss, fragmentation, roads, and collecting). There is clearly not enough information to make a status assessment for this species (U).
- Limited information on this species in terms of populations. Comments about loss of Pinelands habitat does pose questions about this species; however, there seems to be little data about this species in other areas. (U)

**NORTHERN SCARLET SNAKE (*Cemophora coccinea copei*)**

ROUND: 3

**CONSENSUS: YES - Threatened**

STATUS	E	T	SC	S	U	NO	NA
# VOTES		6	1			1	
Avg. CONFIDENCE		5.3	6				

*ROUND 1:*

- Extraordinarily rare. Isolated to pinelands. Threatened by all the things that threaten the existence of all pinelands species--habitat loss, fragmentation, roads, collecting (E)
- Secretive species so hard to estimate population accurately, but very rarely seen and few documented records available (T)
- Only found in southern NJ (never found in Ocean or Monmouth Co.) in small colonies. Stronghold for the species is the XXXXX Preserve . NJ (T)
- This is a tough one. Fossorial, historical records from southern NJ. I only saw one in North Carolina in 6 years, where they are relatively common, so likely to be more common than realized (SC)
- I'm only aware of one reliable place to find this snake, but I know it's been observed elsewhere in the Pines. It's just too cryptic and fossorial that difficult to assess its status (U)
- Have never seen this species in NJ and no information was provided for them (U)

*ROUND 2:*

- While secretive, this small snake has limited distribution in NJ Pine Barrens. Strongholds are Burlington and Cumberland Counties. A few records from Atlantic Co, populations are disjunct and they are rare in New Jersey (T)
- Extraordinarily rare. Isolated to Pinelands. Threatened by all the things that threaten the existence of all Pinelands species--habitat loss and fragmentation, roads, collecting (T)
- Still very hard to find, easier years ago (T)
- No mapped locations to evaluate and no other information was provided. Round-one comments note that it's found only at a single location and that its status is difficult to assess. If the distribution is truly that limited and so little is known about the species, then a status of special concern fits the best (SC).
- From the definition for SC, "This category includes species that meet the foregoing criteria and for which, in addition, there is little understanding of their current population status." While I believe this species has historically suffered from habitat loss and now has a reduced range, like many PB snake species, much of the remaining habitat is preserved, secured land. Insufficient work has been done to understand more about its distribution or population status and until that time it best fits into the SC category (SC).

*ROUND 3:*

- Extraordinarily rare. Isolated to Pinelands. Threatened by all the things that threaten the existence of all Pinelands species – habitat loss and fragmentation, roads, collecting. Comment regarding the "preserved, secure land" in the Pinelands by one reviewer is ludicrous and should be ignored. The Pinelands are increasingly fragmented, threats of developments, pipeline corridors, increasing traffic volume, and collectors will continue to increase (T)
- Although secretive, they are a rare snake and populations are restricted or absent in most Pine Barrens Counties (T)
- Based on comments from Round 2, this species appears to not only be declining but likely has only isolated populations remaining limiting (if not eliminating) its opportunities for genetic exchange or distribution expansion. In addition, as with all the Pinelands snakes, this species faces the same threats of habitat loss and fragmentation as a result of development and infrastructure, potential road kills, wanton killing from being misidentified as a timber rattlesnake. This species should be listed as threatened (T).
- Limited distribution, fossorial habit make it hard to find and hard to evaluate, but apparently declining based on no recent observations in areas where it occurred. (T)
- The common themes from round one and two comments is that this species is rarely found, fossorial, secretive, limited in distribution, lacking records, and difficult to assess. All of these factors point to the definition of special concern (SC).

**NORTHERN BLACK RACER (*Coluber constrictor constrictor*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				6.7			

*ROUND 1:*

- Although considered regionally imperiled, my ranking decision is based on their presence within New Jersey (as per NJ ENSCA) and the frequency, quantity and distribution of the species observed personally and by associates and residents throughout New Jersey. However, the more recent discovery of the snake fungal disease’s distribution and potential presence in Black Racers in NJ and confirmed in other states, may indicate this species is at risk of decline (S)
- No information was provided on this species, but I run across them often in the Pinelands(S)
- Widespread, common (S)
- Commonly encountered (S)
- A common snake throughout NJ (S)

**TIMBER RATTLESNAKE (*Crotalus horridus horridus*)**

ROUND: 4                      CONSENSUS: **YES- Endangered**

STATUS	E	T	SC	S	U	NO	NA
# VOTES	7	1					
Avg. CONFIDENCE	7	6					

*ROUND 1:*

- Based on loss of habitat and that this species has a limited habitat, Timber rattlesnake populations seem regionally isolated. In some cases, human disturbance is not affecting the behavior of this species. However, direct loss of habitat, including disturbances in hibernacula may impact areas where this species occupies. Also, construction of access areas may cause an increased possibility of road mortality (E)
- Pinelands populations/highlands populations, Kittatinny populations isolated and small. Genetic results (Bushar/Reinert unpublished) show low genetic diversity and population, particularly in pinelands. Significant threats due to habitat loss, fragmentation, roads, collecting, and persecution (E)
- Based on recent field observations, habitat loss, road mortality, and decline in the Pine Barrens- it should be an endangered species (E)
- The core habitats of populations throughout the T. Rattlesnake’s Northern extent within NJ appears to reside on conserved lands surrounded by development and/or infrastructure, limiting interaction with other populations and likely increasing wanton and/or accidental killing. Populations within the Pinelands appear to reside on both conserved and privately owned, but for the most part, undeveloped lands. However, it is difficult to protect necessary habitats on private lands to fulfill all life history requirements including interaction with other populations and therefore, this population faces the same threats as the north including the most recent addition, snake fungal dermatitis/disease. With that said, habitat protection and ENSCA have played the key roles in this species persistence; i.e., not any form of management and yet, has not been extirpated. As such, it is my belief that the T. Rattlesnake does not meet the definition of an "Endangered Species" (T)
- This species is currently listed as endangered, but its survival in NJ does not appear to be in immediate danger and it likely does not require immediate action to avoid extinction. Although protected land is not devoid of hazards, such as vehicles, linear development, forestry operations, poaching, etc., most of the known locations are on protected land, and new locations, especially dens, are still being found for both the northern and southern populations. The new locations are likely a result of recent targeted searching. A threatened status is a better fit for this species (T)
- I’ve seen them in northern and southern NJ multiple times; problem is they tend to be persecuted. We are not on the edge of their range (T)

*ROUND 2:*

- Pinelands populations/Highlands population/Kittatinny populations isolated and small. Recent genetic results (Bushar *et al.* 2014) show that Pinelands populations are isolated from all other timber rattlesnake populations. It also shows that population within the pinelands have low genetic diversity and a high degree of population isolation. There are significant threats to this species due to roads, habitat loss, fragmentation, collecting, and persecution. The isolated rattlesnakes of the NJ pinelands are probably the most critically imperiled population of this species anywhere in their broad distribution. There is no question that this species warrants endangered status in the State. The pinelands population of timber rattlesnakes probably also warrant endangered species status on the Federal level. (E)
- Relatively rare, persecuted, vulnerable habitat (E)
- Populations are being lost in NJ. Evesham Twp is a good example (E)
- Limited habitat and range (E)
- I agree with the round-one comments and information provided regarding vulnerabilities due to population isolation, low genetic diversity, fragmentation, roads, collecting, persecution, etc., as well as comments that timber rattlesnake persistence in NJ is likely due to habitat protection rather than active management for the species. Based on the information provided, in the past 13 years, 78 hibernacula have been identified in the Highlands area (40), Kittatinny area (16), and Pinelands area (22), as well as a number of gestation and basking areas. The amount of recent information collected for this species is impressive. Its survival in NJ is not in immediate danger and immediate action is not required to avoid extinction in the state. Therefore, this species does not meet the definition of endangered and should be listed as a threatened species (T).
- Timber rattlesnakes face a variety of threats in NJ including human persecution and wildlife disease, but they have persisted in NJ for hundreds/thousands of years and the vast majority of their prime habitat is on preserved land, both in the north and the south. An “endangered species likely requires immediate action to avoid extinction within NJ” and this just isn’t the case for timbers. Although populations are somewhat isolated and therefore, genetic exchange is limited, it is unclear what those variables are (i.e., number of individuals within a population or subset of the metapopulation) and subsequently, the amount of time it would take to result in homogeneity or genetic mutations and ultimately, their decline. If snake fungal disease is shown in the future to extirpate local populations or a better understanding of the populations’ structures and long-term welfare are determined and as such, populations are deemed at great risk, we should elevate to E, but right now no immediate action is needed for this species to remain viable in NJ in both the short and long-term (T).

*ROUND 3:*

- This species merits legal protection in NJ. They continue to lose habitat and individuals in the state (E)
- Pinelands populations/Highlands Populations/Kittatinny populations isolated and small. Recent genetic results (Bushar *et al.*, 2014; and Bushar *et al.*, 2015) show that Pine Barrens populations are isolated from all other Timber Rattlesnake populations. It also shows that populations within the Pine Barrens have very low genetic diversity and a high degree of population isolation. Paved roads isolate Pine Barrens populations into 3-4 subpopulations with restricted gene flow. There are significant threats to this species due to roads, habitat loss, fragmentation, collecting, and persecution. The isolated rattlesnakes of the New Jersey Pine Barrens are probably the most critically imperiled populations of this species anywhere within their broad distribution. There is no question that this species warrants Endangered status in the State. The pinelands populations of Timber Rattlesnakes probably also warrant Endangered species status at the Federal level. Reviewer’s comments concerning the status of Threatened for the northern populations could be academically debated, and I might agree. However, Highlands and Kittatinny populations also face the constant threats of roads, fragmentation, collecting, and persecution. Unless we separate the

northern and pinelands populations for listing purposes, we must stick with endangered status statewide. Contrary to the comments of one reviewer, Timber Rattlesnake populations in the Pine Barrens will require intervention if they are to persist. My status category selection for this species will not change no matter how many rounds we go through (E)

- Loss of habitat. They have a very defined habitat where uplands forest structure and hibernacula are defined. Such areas are being fragmented and/or disturbed. There are areas of the Pine Barrens that this species is stable; however this is limited.(E)
- Endangered for the pine barrens populations; not sure about northern NJ (E)
- A plethora of information regarding timber rattlesnake sensitive areas and dispersal ranges has been gathered over the past decade (in addition to prior data), however the information demonstrates the timber rattlesnakes' shrunken range over time and limited opportunities for genetic exchange and limited if not eliminated opportunities for range expansion. In the north, the timber rattlesnakes are confined to conserved lands within the Kittatinny mountains and Highlands Region. Like the copperhead, these lands are surrounded by development and infrastructure, limiting movement, range expansion, and increasing the risk of mortality from wanton or accidental killings. The Pinelands population contends with the same issues as all Pinelands snakes (e.g., habitat loss and fragmentation by development and infrastructure, illegal collection and currently, a lack of habitat management) and the added threat of wanton killing. Although the species has persisted over time with limited protection (when you consider how long they've been here versus regulations over the past 40 years), the information researchers have gathered only supports how limited this species is with regard to opportunities to increase and/or expand their range to ensure continued persistence. This species should be listed as endangered (E).
- Well-studied species. Genetic isolation and sparse distribution in Pines. This species is persecuted, collected, and killed on roads. The fungal disease has been found in the northern population. Although it may not be in imminent danger of extinction, neither are its isolated populations secure. (T)
- As noted by several reviewers, no immediate action is needed to prevent this species from going extinct within NJ. Therefore, it best fits the definition of threatened (T).

#### *ROUND 4:*

- The detailed comments supporting ENDANGERED are informative and persuasive. One argument for THREATENED "prosecuted, collected, and killed on roads" seems to equally support ENDANGERED status (E)
- Loss of habitat and geographically limited in the state. Pine Barrens population seems to be stable in some areas; however, there are losses of habitat and genetic isolation may be apparent as there are genetic distinctions between the northern and southern population. Based on the comments, this species should remain on the endangered list and there is no other information to suggest an improvement in breeding populations. (E)
- Its status has not changed. Merits the endangered category (E)

**NORTHERN RING-NECK SNAKE (*Diadophis punctatus edwardsii*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				6	1	2	
Avg. CONFIDENCE				5.1	6		

ROUND 1:

- Ranking decision is based on the frequency and distribution of the species observed personally and by associates and residents throughout New Jersey. No [documented] research has contributed information that would suggest the Northern Ring-Neck Snake is unstable. As with all snakes, they are at risk of population decline caused by the snake fungal disease (S)
- This snake is commonly seen in suitable habitats in northern NJ. Found 10 in 2013 (S)
- Fossorial salamander specialists, not rare (S)
- Widespread, common. This distribution and relationship of the two different subspecies in NJ is not clear. Must treat largely as one single entity at this point (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (S)



**SOUTHERN RING-NECK SNAKE (*Diadophis punctatus punctatus*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				6	1	2	
Avg. CONFIDENCE				5.5	6		

*ROUND 1*

Distribution and relationship of the two different subspecies in NJ is not clear (S)

- Found often by random searching in the Pine Barrens. Often found under logs or boards on the forest floor. Have found several in the last 5 years in Ocean and Burlington Co. (S)
- Snakes appear well distributed in its NJ Range (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (U)

**EASTERN HOGNOSE SNAKE (*Heterodon platirhinos*)**

ROUND: 3

**CONSENSUS: YES – Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			7	1			
Avg. CONFIDENCE			5.3	5			

*ROUND 1:*

- Hognose snakes are not captured as often as they used to be in southern NJ. Only found in Mahwah, NJ in 2013. More studies are needed with this species to determine their status (SC)
- Ranking decision is based on the limited frequency with which the species is observed personally and by reliable associates. No [documented] research has contributed information that would suggest the Eastern Hognose population is stable or improving and yet, they face the same threats as all NJ species (development, infrastructure, wanton killing, poaching, illegal collection, ORV-induced deaths, etc.). However, since this snake is found statewide, it seems to be less of a priority than a species with a limited range in the State. As with all snakes, they are at risk of population decline caused by the snake fungal disease (SC)
- Two different populations likely- pinelands and Appalachian. May have different issues (SC)
- Not commonly encountered by me, but are not abundant anywhere in their range (S)
- Has a statewide distribution and seems to be a fairly common snake to find in the Pinelands (S)

*ROUND 2:*

- This species can be found with some regularity at particular “hotspots” in both the north and the south, but more information can be collected to understand its population status (SC).
- Not as common in Pine Barrens; seen 3-5 times per season 10-20 yrs ago, now lucky if 1 a season (SC)
- Two different populations likely--Pinelands and Appalachian. Facing similar problems to as timber rattlesnake (SC)
- Often mistaken as a venomous species by public and killed. More research is needed to determine their decline (SC)
- No mapped locations or other information was provided that could be assessed. A round-one commenter noted that no research has shown that they are stable or improving. I would add that no evidence exists that they are declining. Another round-one commenter mentioned that they are not captured as often as they used to be. My colleague and I found three live hognose snakes this year in widely separated areas of the Pinelands, not hunting for snakes, but merely by being in the woods. That’s an increase in haphazard hognose finds for us. Although I have seen almost every NJ snake species dead on a road, I have never seen a DOR hognose. No compelling evidence of inherent vulnerability (a prerequisite for being E, T, or SC) has been presented; therefore a status of stable (or even undetermined) would be most appropriate (S).

*ROUND 3:*

- Often killed by people who mistake them as venomous. This species has declined drastically along with other snakes (SC)
- Areas are being fragmented and more population studies are needed (SC)
- Two different populations likely – Pinelands and Appalachian. Facing similar problems as Timber Rattlesnake. It is slightly more common and widespread that is why SC is the correct classification. The reviewer who thinks their populations are stable or secure simply because he happened to find 3 in the pines in the past year is ignoring the bigger picture (SC)
- My experience in pinelands indicates it is much less common than 20 years ago. (I also think Fowlers Toads, an important food, have declined there as well) (SC)
- It does seem that this snake is one of the less frequently observed (personally and by reliable sources) but it is unclear if that is due to population decline or detectability issues. Although there is no “hard” evidence that shows the populations are increasing/stable or declining, we do know threats to these snakes persists: 1) Their optimal habitat in the northern region is lacking due to a lack of forest management, 2) some are killed due to people misidentifying them as timber rattlesnakes, 3) they face the same threats to their population as other snakes (and reptiles/amphibians for that matter) including habitat loss and fragmentation. One commenter stated that he/she has never seen a road killed hog nose; does this indicate that there are fewer hog nose than any other snake species, that hog nose have smaller home ranges and limit their dispersal (and genetic exchange), that hog nose are quick to cross the road, or simply that he/she haven’t been at the “right place at the right time”. It’s reasonable to believe that some have likely been killed by vehicle strikes given NJ’s dense infrastructure; simply adding this threat to the list. Although there is limited information regarding this species, given the majority of commenters agree that fewer have been observed in recent years and the list of threats this species faces, this snake should be listed as special concern (SC)
- No information has yet to be presented that shows that this species is increasing, decreasing, or stable. Therefore, the status should be either stable or undetermined. Since there are no other undetermined votes, I’m sticking with stable (S)

**EASTERN KINGSNAKE (*Lampropeltis getula getula*)**

ROUND: 4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES		6	2				
Avg. CONFIDENCE		6	6.5				

*ROUND 1:*

- Overall statewide available habitat has been impacted over time reducing amount of available habitat. Threats like collection from the wild are of concern. Ranking decision is based on the limited frequency with which the species is observed personally and by reliable associates, and by the continued threats this species faces in the Pinelands (development, infrastructure, wanton killing, poaching, illegal collection, ORV-induced deaths, etc.) compounded by a limited range within the State. As with all snakes, they are at risk of population decline caused by the snake fungal disease (T)
- This species is on the decline in the Pine Barrens. [We] rarely catch them in drift fences, or find them on roads alive. While they are secretive, [we] do not find them as frequently as we did 10 years ago (T)
- Based on incidental observations this species appears to be in decline. Trend seems downward, which fits the definition of Threatened (T)
- Uncommon, pinelands species. Subject to pressure from habitat isolation, fragmentation, roads, and collecting (SC)
- Not seen by me in NJ, not common (SC)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (U)

*ROUND 2:*

- Uncommon, pinelands species. Subject to pressure from habitat isolation, fragmentation, roads, and collecting (T)
- Used to see on roads in Pine Barrens 1-2 times per season, now almost never see (T)
- From the definition for SC, "This category includes species that meet the foregoing criteria and for which, in addition, there is little understanding of their current population status." While I believe this species has historically suffered from habitat loss and now has a reduced range, like many PB snake species, much of the remaining habitat is preserved, secured land. Insufficient work has been done specifically on the King Snake to understand more about its distribution or population status. However, there is anecdotal evidence that the population is declining based on declining observations by researchers and/or consultants working within the Pinelands. Until additional information can be gathered, it best fits into the SC category (SC).
- A handful of mapped locations were provided, but it's clear that data have only been collected in more recent years. Several round-one commenters noted this species is on the decline, but none were able to offer any evidence of declines. They mentioned not seeing as many as they used to. This year alone, a colleague and I found four dead kingsnakes and four live ones, which is a lot especially since we were not hunting for snakes. Three of the snakes were dead on roads, one was dead in a pond, three of the four live snakes were neonates, and the other live snake was an adult. These snakes were found in different portions of the Pinelands, but within the range of the locations provided on the ENSP map. It's not clear whether these finds show an increase or a decrease in kingsnake abundance. What is clear from these finds, and DOR kingsnakes found in the past, is that roads are one of the threats to this species. However, little is known about their distribution and population status in NJ. The combination of these factors makes the current status of special concern the most appropriate designation (SC).

*ROUND 3:*

- Kingsnakes spend winters in wetlands (like Timbers in the Pinelands), and are secretive. Nevertheless, they are a declining species. Habitat loss and road kills are reducing populations in NJ (T)
- Uncommon, pinelands species. Subject to pressure from habitat isolation, fragmentation, roads, and collecting. Again, the comment from one reviewer concerning the "preserved, secure land" in the pines is ridiculous and ignores the available information regarding the real threats to large, snakes like the Pine Snake and Kingsnake that dwell in this region (T)
- Based on Round 2 comments (SC)
- This is a conspicuous, diurnal snake that used to be seen frequently on roads in the pinelands. Hardly any in recent years; none last year. Collectors may be the biggest threat for this strikingly marked species. Also road kills. (T)
- Except for anecdotes and DOR records, round one and round two comments provided no significant evidence of any decline. According to Wund et al. (2007), kingsnakes in the Pinelands are secretive and fossorial, spending about 80% of their time concealed. They reported that, even in open areas, kingsnakes were located under leaves in heavy shrub cover. Although they reported that kingsnakes used both upland and wetland habitats, they always hibernated in the root systems in or adjacent to wetlands, such as red maple swamps. For these reasons, people generally don't encounter this species, which is why it appears to be rare. The DOR records show that it is inherently vulnerable to roads, but virtually nothing is known about their population status. Therefore, this species best fits the definition of special concern (SC).

*ROUND 4:*

- This is a species that I used to see in wetland areas in the pines or crossing roads, but I haven't see it in years. It is highly prized in the pet trade and could become ENDANGERED. Therefore at present I would go with THREATENED with pretty high confidence [T]
- Based on the round 3 comments, it seems that this species is in decline and there is a loss of habitat. (T)
- While its true kingsnakes are secretive, they suffer from over-collecting, road kill, and habitat loss. Populations have declined based on my personal experience, especially in Monmouth, Camden, Cape May, and Ocean Counties (T)

**EASTERN MILKSNAKE (*Lampropeltis triangulum triangulum*)**

ROUND: 2		CONSENSUS: YES- Secure/Stable					
STATUS	E	T	SC	S	U	NO	NA
# VOTES			1	6		1	
Avg. CONFIDENCE			6	6			

*ROUND 1:*

- Snakes appear well distributed in its NJ range. Ranking decision is based on the frequency, quantity and distribution of the species observed personally and by associates and residents throughout the State. However, the more recent discovery of the snake fungal disease’s distribution and confirmed presence in milksnakes in other states may indicate this species is at risk of decline (S)
- Commonly encountered (S)
- Common, widespread (S)
- Milksnakes have remained stable throughout their range in NJ. The northern population is probably more common than the Pine Barrens group, due to their popularity in the pet trade (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (S)

*ROUND 2:*

- The single reviewer that designated this species as special concern in round one offered no supporting comments to evaluate for round two. Multiple reviewers in round one chose stable, which is the same designation I gave them in round one. Therefore, I’m sticking with stable for round two (S).
- Common and widespread (S)
- The milksnake appears to be a common species inhabiting our preserved lands as well as our suburban communities and commercial business parks. Although they face some of the same threats as other snakes (e.g., wanton killing due to misidentification, road mortality, disease), they do not have a restricted range and use a variety of habitats. This affords them a greater opportunity to persist in addition to continued genetic exchange for healthier individuals/populations and therefore, it best fits “S”(S).

**NORTHERN WATERSNAKE (*Nerodia sipedon sipedon*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				7.1			

*ROUND 1:*

- Snake appears well distributed in NJ range. Ranking decision based on the frequency, quantity and distribution of the species observed personally and by associates and residents throughout the State. However, the more recent discovery of the snake fungal disease’s distribution and confirmed presence in Northern Watersnakes in other states may indicate this species is at risk of decline. (S)
- Appears to be common throughout NJ (S)
- Trash snake (S)
- Widespread, common (S)
- No information was provided on this species, but I run across them often in the Pinelands (S)

**ROUGH GREENSNAKE (*Opheodrys aestivus*)**

ROUND: 3

**CONSENSUS: YES – Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			6		1	1	
Avg. CONFIDENCE			5		6		

*ROUND 1:*

- Pinelands species, subject to habitat isolation, fragmentation, roads, and collecting (SC)
- Rough greensnakes are often found dead on the roads in the Pine Barrens. In the past 10 years, they have not been seen in drift fence traps or by random searching. It appears they have declined by 40% (SC)
- Overall statewide available habitat has been impacted over time reducing amount of available habitat. Restricted state range (SC)
- Cryptic! Not often seen unless DOR (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (U)

*ROUND 2:*

- Seen more rarely (T)
- Pinelands species, subject to habitat isolation, fragmentation, roads, and collecting (SC)
- From the definition for SC, “This category includes species that meet the foregoing criteria and for which, in addition, there is little understanding of their current population status.” This species has historically suffered from habitat loss within its already restricted state range, creating a further reduced range. As with many PB snake species, much of the remaining habitat is preserved, secured land, however this snake faces many of the same threats as other snakes including collection. Although insufficient work has been done specifically on the Rough Green Snake to understand more about its distribution or population status, there is anecdotal evidence that the population is declining based on declining observations by researchers and/or consultants working within the Pinelands. Until additional data can be gathered, it best fits into the SC category (SC).
- A round-one commenter stated that, in the past 10 years, this species has not been seen in drift fence traps or by random searching, and they concluded that this species has declined by 40%. This is primarily a Pinelands species and, according to a report recently released by the Pinelands Commission, development applications in the Pinelands have dropped by 81% from January 2002 through June 2012. Perhaps the drop in development activity and the corresponding lack of related drift fence surveys in recent years is responsible for the commenter’s conclusion rather than a decline in species abundance. No mapped locations or other information was provided for this species and, other than road kills, which occur to just about any species, none of the round-one comments offered any solid evidence of serious threats, declines, or increases. Therefore, I would have to assign an undetermined or stable status to this species. Due to the lack of information on this species, a status of undetermined-unknown seems most appropriate (U).

*ROUND 3:*

- This species is not easy to find because of their cryptic coloration. Several are seen each year on sand and paved roads. They are locally abundance in ideal habitats. (SC)
- Evidence from general herp surveys in the pinelands indicates a population decrease. Like most pineland species, fragmentation is an issue. This is one of those species that is not likely to become the target of specific studies. Thus it is unlikely that we will ever have better data, than that obtained incidental to other herp or ecologic studies. (SC)
- Pinelands species, subject to habitat isolation, fragmentation, roads, and collecting (SC)
- Based on Round 2 comments; although limited information is known about this species, as a Pinelands species, it must contend with the same threats as other Pinelands species (e.g., habitat loss and fragmentation by development and infrastructure, illegal collection and currently, a lack of habitat management). As such, it may be more appropriate to list this species as special concern (SC) given the likelihood of current and future impacts to the population in the Pinelands that could limit if not eliminate population increases, genetic exchange and/or distribution expansion. (SC)
- No information has been provided by the ENSP staff or the reviewers for this species. There has been no evidence of decline in numbers, no evidence of an increase in abundance, no mapped locations given, and no evidence of any specific threats (except the constant and erroneous comment that all Pinelands species are threatened by habitat loss, fragmentation, roads, and collecting). There is clearly not enough information to make a status assessment for this species (U).

**SMOOTH GREENSNAKE (*Opheodrys vernalis*)**

ROUND: 4

CONSENSUS: NO

STATUS	E	T	SC	S	U	NO	NA
# VOTES		1	4	2		1	
Avg. CONFIDENCE		7	5	4			

*ROUND 1:*

- This snake is rarely seen within its known range in northern NJ. [We] have only found one specimen in 37 years of field work. It merits protection and more research (T)
- Widespread, but not common (S)
- Not enough information. I'm only aware of a handful of observations from northern NJ, but there may be more, just not enough survey effort (U)
- Have never seen this species in NJ and no information was provided for them (U)
- We are well within the range, but I have never seen one in NJ. Cryptic, at least to me (NO)

*ROUND 2:*

- Only two populations known in Sussex Co and Passaic Co; may be in Warren Co. This is a rare snake in NJ (T)
- Widespread but not common (S)
- I have no experience with this species, but because no information was provided for them and round-one comments indicate there is little known regarding their distribution, occurrence, and population status, a status of undetermined-unknown seems the best fit (U).
- Ultimately, the intention of listing is to prevent a species from becoming extirpated from the state. As such, it appears the main difference between the definitions for "Undetermined-Unknown" and "Special Concern" is that SC states the species "warrant special attention because of inherent vulnerability to environmental deterioration or habitat modification that would result in their becoming Threatened if conditions surrounding the species begin or continue to deteriorate." Although all of NJ's wildlife is vulnerable to habitat loss, given the amount of conserved lands it is difficult to determine whether or not this species' vulnerability to environmental factors (and subsequent threats such as genetic isolation, disease, etc.) would eventually lead to its extirpation (i.e., T to E to extirpated). It seems to me that at this time, we simply do not know enough about this species to determine its status and therefore, it would best fit "U" (U).

*ROUND 3:*

- Only a few populations remain in Sussex, Passaic, and possibly, Warren Counties. Very rare! (T)
- Widespread, but not common (S)
- I have no personal experience with this species in NJ. Round 2 info is clearly conflicting "Only two populations known... This is a rare snake in NJ (T)" versus "Widespread but not common (S)" By virtue of the fact that about half the participants including me, listed U or NO, I am voting for special concern. Two people thought it was "stable", while four people ("U" and "NO") indicated not enough information to support "stable". (SC)

*ROUND 4:*

- How can a snake population be "widespread but not common"? HA spent 3 weeks in 2014, visiting all the known smooth green snake locations, only 8 individuals were found at one location in Sussex County. None were found at other historical sites. It is not "widespread" in NJ (T)
- Based on the comments from round 3, there seems to be a lack of agreement on this species designation. Although, not enough is known, it seems that special concern may be the best designation for this species. (SC)
- I agree with one reviewer that, based on the comments in previous rounds that shows opinions are all over the place, very little is known about the status of this species, which clearly points to U or SC. Since there are currently no U votes, I'm going with SC. (SC)
- There isn't a lot of new information in the last round. There isn't enough information to support STABLE, but there does seem to be enough to support SPECIAL CONCERN [SC].

**EASTERN RATSNAKE (*Pantherophis alleghaniensis*)**

ROUND: 1	<b>CONSENSUS: YES- Secure/Stable</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES				7		2	
Avg. CONFIDENCE				6.4			

*ROUND 1:*

- No information was provided on this species, but I run across them often in the Pinelands (S)
- This species is widespread throughout NJ, wherever suitable habitat is present. It is common in northern NJ and in the edge of the Pine Barrens (S)
- Widespread, common (S)
- Common throughout (S)
- Snake appears well distributed in NJ range. Ranking decision is based on the frequency, quantity and distribution of the species observed personally and by associates and residents throughout the State. However, the more recent discovery of the snake fungal disease's distribution and confirmed presence in Black Rats in NJ may indicate this species is at risk of decline (S)



**CORN SNAKE (*Pantherophis guttatus*)**

ROUND: 4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES	6	2					
Avg. CONFIDENCE	7	6.5					

**ROUND 1:**

- Pinelands species with isolated, small populations. Collecting, roads, and habitat fragmentation are obvious problems (E)
- This rare snake needs additional studies to learn what habitat features are most important, what the limited factors are for its poorly understood distribution and what their home range size is (E)
- Observations have been made within the same locales as in previous years (well known to many herpetologists and hobbyists). No additional [documented] research has contributed information that would suggest the Corn Snake population is improving or even stable. However, the more recent discovery of the snake fungal disease’s distribution and confirmed presence in Corn Snakes in NJ may indicate this species is at risk of decline ( E)
- Can be found reliably in the Pine Barrens, where they are disjunct. At risk of collection from snake fanciers. They are a trash snake farther south in the center of their range, e.g. North Carolina (T)
- Although this species is currently listed as endangered, its survival in NJ does not appear to be in immediate danger and it likely does not require immediate action to avoid extinction. Although protected land is not devoid of hazards, such as vehicles, linear development, forestry operations, poaching, etc., most of the known locations are on protected land. Targeted efforts to find new locations might be successful. Because several people I know find them each year, the lack of observations on the map that was provided indicates that many recreational herpetologists do not report their findings to the state. A status of threatened is more appropriate for this species (T)

**ROUND 2:**

- Pinelands species with isolated, small populations. Collecting, roads, and habitat fragmentation are obvious problems. There is little doubt about this status among field workers who know this species well ( E)
- Less common than 5 years ago (E )
- I copied and pasted two comments from round one as my comments for round two, and agree with those comments that a status of threatened, rather than endangered, best fits the corn snake (T):
 

“Observations have been made within the same locales as in previous years (well known to many herpetologists and hobbyists). No additional [documented] research has contributed information that would suggest the Corn Snake population is improving or even stable. However, the more recent discovery of the snake fungal disease’s distribution and confirmed presence in Corn Snakes in NJ may indicate this species is at risk of decline. With that said, habitat protection and ENSCA have played the key roles in this species persistence; i.e., not any form of management and yet, has not been extirpated. As such, it is my belief that the corn snake does not meet the definition of an "Endangered Species" (T)”

“Although this species is currently listed as endangered, its survival in NJ does not appear to be in immediate danger and it likely does not require immediate action to avoid extinction. Although protected land is not devoid of hazards, such as vehicles, linear development, forestry operations, poaching, etc., most of the known locations are on protected land. Targeted efforts to find new locations might be successful. Because several people I know find them each year, the lack of observations on the map that was provided indicates that many recreational herpetologists do not report their findings to the state. A status of threatened is more appropriate for this species (T).”
- Corn Snakes face a variety of threats in NJ including collection and wildlife disease, but they have persisted in NJ for hundreds/thousands of years with little to no management effort other than the enforcement of NJ ENSCA since 1973 and habitat protection through conservation and/or Pinelands Commission regulations. An “endangered species likely requires immediate action to avoid extinction within NJ” and this doesn’t appear to be the need for corn snakes, at least not so far as they continue to be found in the same locations over years, perhaps decades. There appears to be limited information regarding the populations and their distribution; appearing to be separated/isolated. This may eventually lead to genetic-related problems and therefore, the species does need to be further researched, and populations identified for management and connectivity projects. It seems this species would best fit “T” as it appears to have limited information regarding the distribution of this species even with years of surveys by researchers and/or consultants, and as such, may be limited in their distribution and/or population overall, warranting protection of the snakes (and their habitats) (T)

**ROUND 3:**

- Only known from 3 Counties- very rare! (E )
- Pinelands species with isolated, small populations. Collecting, roads, and habitat fragmentation are obvious problems. There is little doubt about this status among field workers who know this species well. We should not be haggling about this species. It is one of most sought after snakes by collectors and consequently extremely vulnerable to decline. In addition, it is very rare and highly spotty in its distribution. It is restricted to the Pine Barrens and exists as a few isolated populations. There are no hidden populations out there waiting to be discovered. What more does a species need to be considered endangered? My status category selection for this species will not change no matter how many rounds we go through (E )
- This species, although endangered, seems to more difficult to find. Human disturbance and loss of habitat make this species even more vulnerable (E )
- Fragmentation of pinelands habitats has been major cause of decline. Its beauty and rarity make it a target for collectors [E]
- As noted by several reviewers, no immediate action is needed to prevent this species from going extinct within NJ. Therefore, it best fits the definition of threatened (T)
- Based on Round2 comments. (T)

**ROUND 4:**

- There seems no disagreement that this is a rare and local snake. It is also specifically targeted by collectors. A status of ENDANGERED would enhance efforts to cut down on illegal collecting, encourage enforcement, perhaps assure stiffer penalties. So stick with ENDANGERED. (E)
- Loss of habitat and less encounters than in the past. This species is becoming harder to find, even within known areas. The comments about the limited areas of distribution, etc... makes it difficult to support moving this species from endangered to threatened status. (E)
- There is no indication that this species has increased in population size. No new colonies have been found and none have been reported from Cumberland or Atlantic Counties in the past several years (E)

**NORTHERN PINE SNAKE (*Pituophis melanoleucus melanoleucus*)**

ROUND: 2

**CONSENSUS: YES- Threatened**

STATUS	E	T	SC	S	U	NO	NA
# VOTES		8					
Avg. CONFIDENCE		7.1					

*ROUND 1:*

- Pinelands species subject to impact of habitat isolation, fragmentation, roads, collecting and persecution. Decline in recent observations (E)
- Pine snakes have a large home range (150-1000 acres for adults). Road mortality, predation by hawks, coyotes, foxes, etc continue to reduce population, along with habitat loss (T)
- Overall statewide available habitat has been impacted over time reducing amount of available habitat. Threats like collection from the wild are of concern. Road kill major concern too. Ranking decision is based on the species limited range within the State and the continued presence of (and increasing) threats (development, infrastructure, wanton killing, poaching, illegal collection, ORV-induced deaths, etc.) to their populations. As with all snakes, they are at risk of population decline caused by the snake fungal disease (T).
- Working in the field, loss of habitat is a problem for the future of this species. Relocation projects have had marginal success. There is still a lack of information known about the ecological aspects of this species. As a result of limited habitat, loss of habitat and increased anthropogenic threats, this species should remain a threatened species (T)
- Increased mortality from roads and loss of habitat through development has severely impacted the species (T)
- Working in the field, loss of habitat is a problem for the future of this species. Relocation projects have had marginal success. There is still a lack of information known about the ecological aspects of this species. As a result of limited habitat, loss of habitat and increased anthropogenic threats, this species should remain a threatened species. (T)
- According to the pine snake status assessment that was provided, the loss of modeled pine snake habitat was <2% in the Pinelands Area, about 5% in the areas of NJ with no pine snake specific regulations, and almost 18% in the CAFRA zone. About 72% of the historic pine snake range falls within the Pinelands Area and about 60% of the Pinelands Area range is on protected land. Although it appears that the majority of current pine snake habitat is protected, there are numerous threats to this species and the status of threatened still fits. (T)
- Disjunct in the Pine Barrens, but locally abundant, much more so than *Crotalus* or corn snakes. They are much more common here than in North Carolina (SC)

*ROUND 2:*

- Although a high percentage of Pine Snake habitat is protected from development, it is not necessarily “protected”. Conserved lands within the Pinelands have on-going problems with illegal and sanctioned ORV use through Pine Snake territory. Activities that may both directly and indirectly harm the snakes, their nests and their dens. NJ Pine Snakes are considered prized items on the collectors’ market with their contrasting colors and illegal collection has not declined. This is in addition to “standard” threats of road mortality, wanton killing (often due to misidentification), nest predation, disease, etc. An “endangered species likely requires immediate action to avoid extinction within NJ” and this doesn’t appear to be the need for Pine Snakes given much of their protection has been through the implementation/enforcement of NJ ENSCA and habitat protection through conservation and/or Pinelands Commission regulations. There has been some management effort by researchers over the past 30-40 years to create artificial wintering dens to assist in the populations’ persistence, but considering 1000’s of years of their presence, this has been a limited effort to manage the species. As such, it would best fit “T” (T).
- I copied and pasted two comments from round one as my comments for round two, and agree with those comments that a status of threatened is the most appropriate for the pine snake (T):
  - “Overall statewide available habitat has been impacted over time reducing amount of available habitat. Threats like collection from the wild are of concern. Road kill major concern too. Ranking decision is based on the species limited range within the State and the continued presence of (and increasing) threats (development, infrastructure, wanton killing, poaching, illegal collection, ORV-induced deaths, etc.) to their populations. As with all snakes, they are at risk of population decline caused by the snake fungal disease. Working in the field, loss of habitat is a problem for the future of this species. Relocation projects have had marginal success. There is still a lack of information known about the ecological aspects of this species. As a result of limited habitat, loss of habitat and increased anthropogenic threats, this species should remain a threatened species (T).”
  - “According to the pine snake status assessment that was provided, the loss of modeled pine snake habitat was <2% in the Pinelands Area, about 5% in the areas of NJ with no pine snake specific regulations, and almost 18% in the CAFRA zone. About 72% of the historic pine snake range falls within the Pinelands Area and about 60% of the Pinelands Area range is on protected land. Although it appears that the majority of current pine snake habitat is protected, there are numerous threats to this species and the status of threatened still fits. (T).”
- Pinelands species subject to impact of habitat isolation, fragmentation, roads, collecting, and persecution. Decline in recent observations. Probably should be listed as endangered, but threatened status at least (T)
- Loss of habitat affects this species. With recent relocation projects, this species has not adapted well. However, changes in landscape creating open areas with shelter seem to become preferred habitat. Thus, this species should have regional abundance; however, there will be greater habitat fragmentation that will lead to more isolated populations (T).

**QUEEN SNAKE (*Regina septemvittata*)**

ROUND: 4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES	3				2	1	2
Avg. CONFIDENCE	6.3				6.5		7.5

*ROUND 1:*

- May already be extirpated. No recent sightings. Habitat (stream) degradation and pollution sensitivity major threats in the area of potential occurrence (Jackrel & Reinert 2011) (E)
- I believe this species no longer exists in the state. Targeted survey by the Division several years ago lead to negative results. Habitat degradation in historic range likely led to its decline/extirpation. However, it has recently been documented across the river in northeast DE. (NA)
- This species provably does not occur in NJ. It should be removed and listed as “extirpated” (NA)
- Although this species is currently listed as endangered, there are no records in the Biotics database and no information was provided that indicates the species can be found in the state. Seems to be not applicable (NA)
- Uncertain if species still occurs in the state, but if not there is a potential for it to re-colonize or have likelihood of surviving in NJ based on proximity of locations in surrounding states. (U)
- Never seen one in NJ in 30 years (NO)

*ROUND 2:*

- May already be extirpated, but this is unknown. Populations still exist directly across the Delaware River in Pa. Any remaining populations in New Jersey are undoubtedly endangered and warrant protection. The narrow diet and habitat requirements of this species make it an indicator of stream quality (E)
- Surveys conducted by the Division were limited in both the effort and personnel; i.e., it is unclear how “comprehensive” the survey was given there is limited documentation available. Although it does seem no one has observed this species in many years and therefore, it is possible the snake is already extirpated from our state, a more thorough survey effort may reveal (an) isolated population(s) that have gone unnoticed. “NA” certainly could apply given the limits of the definition, however I would hate to see the Queen Snake “written off” before we attempt to gather more information through a more comprehensive survey effort. As such, I believe it would best fit “U” (U).
- Should be considered extirpated (NA)
- Extirpated from NJ. Should be removed from list (NA)
- The total lack of information on this species in NJ indicates that it was extirpated or never occurred in NJ. Not applicable seems the best fit for this species (NA).

*ROUND 3:*

- Populations still exist directly across the Delaware River in Pennsylvania. Any remaining populations in New Jersey are undoubtedly endangered and warrant protection. The narrow diet and habitat requirements of this species make it sensitive to pollution and an indicator of stream quality. The survey performed recently was very limited, so it is not appropriate to “write off” this species as extirpated. Endangered is the only suitable category for this species. Comments that “it never occurred in NJ” are totally inaccurate. This is a cryptic species that can avoid detection ( E )
- There is very little information on this species. Absence of evidence is not evidence of absence. We would need extensive documentation of failed efforts over a period of years to find this species before considering it EXTIRPATED. A water-loving species, that occurs in adjacent areas is likely to be present. It should not be taken off the state list. And if a population is documented, it would clearly be at least threatened. (T)
- Based on Round2 comments. (U)
- extirpated (NA)

*ROUND 4:*

- We are all over the map on Queen Snake in the last round. I can’t see that enough survey work has been done to support EXTIRPATED. There is a strong statement that it is a cryptic species that occurs in NJ. I think this is the most detailed and persuasive statement, so I would support ENDANGERED. The more I read, the more endangered it seems [E]
- From comments based on round 3, it seems that this species is less evident, even in areas with known populations. Thus, this species should remain on the endangered list. [E]
- It seems obvious to me that no one knows anything about this species, which makes Unknown the appropriate status. (U)
- This species does not seem to be present in NJ. Are there are new or recent records? (NA)

**BROWN SNAKE (*Storeria dekayi*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				6	1	2	
Avg. CONFIDENCE				5.5	6		

ROUND 1:

- It turns up on a regular basis in all types of habitat, even around human disturbed areas (S)
- Widespread, common but may suffer from effects of pesticides (S)
- Small and cryptic, easy to overlook (S)
- Appears well distributed in NJ range (S)
- Have only seen one of these over the years (and it was DOR) and no information was provided for them (U)

**NORTHERN RED-BELLIED SNAKE (*Storeria occipitomaculata occipitomaculata*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				7		1	
Avg. CONFIDENCE				5.7			

ROUND 1:

- Appears well distributed in NJ range (S)
- Small and cryptic, easy to overlook (S)
- Widespread (S)
- Another species that is often found throughout NJ in suitable habitats (S)
- My neighbors and I find multiple individuals of this species in our neighborhood every year and I regularly see them DOR. They appear to be relatively common in the Pinelands (S)

**EASTERN RIBBONSNAKE** (*Thamnophis sauritus sauritus*)

ROUND: 1

**CONSENSUS: YES-Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			1	7		1	
Avg. CONFIDENCE			4	6.1			

ROUND 1:

- Uncommon, threats unknown (SC)
- This species is often found along streams and wetlands that are clean and unpolluted. [We] have seen several over the past 10 years (S)
- Common (S)
- Appears well distributed in NJ range (S)
- Often seen in wetlands, which are largely protected, especially in the Pinelands area (S)

**EASTERN GARTERSNAKE** (*Thamnophis sirtalis sirtalis*)

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				7			

*ROUND 1:*

- Appears well distributed in NJ range. Ranking decision based on the frequency, quantity and distribution of the species observed personally and by associates and residents throughout the State (S)
- Common (S)
- A common species throughout NJ (S)
- Widespread, most common snake in NJ (S)
- I find this species in my neighborhood every year and I regularly see them DOR. They appear to be a relatively common snake in the Pinelands (S)



**EASTERN (SMOOTH) EARTHSNAKE (*Virginia valeriae valeriae*)**

ROUND: 4

CONSENSUS: NO

STATUS	E	T	SC	S	U	NO	NA
# VOTES			5		3		
Avg. CONFIDENCE			5		6		

*ROUND 1:*

- Secretive and rare, may be susceptible to pesticide pollution (SC)
- [We] have only found 4 individuals in Cumberland County, NJ (west of Maurice River). None have been found in northern NJ in the past 37 years (SC)
- Not enough information/data exists to assign a status to this species. I'm only aware of a handful of anecdotal records for this species (U)
- Have never seen this species in NJ and no information was provided for them (U)

*ROUND 2:*

- Very rare and never found during intensive surveys. Only one population known in Cumberland Co (SC)
- Secretive and rare. May be susceptible to pesticide pollution (SC)
- Based on the lack of information and the round-one comments, I'm sticking with my original assessment of undetermined-unknown for this species (U).
- Ultimately, the intention of listing is to prevent a species from becoming extirpated from the state. There was no justification for the "S" recommendation and therefore, it is unclear if this panelist has pertinent information to support such a recommendation. The other panelists are divided: The main difference between the definitions for "Undetermined-Unknown" and "Special Concern" is that SC states the species "warrant special attention because of inherent vulnerability to environmental deterioration or habitat modification that would result in their becoming Threatened if conditions surrounding the species begin or continue to deteriorate." Although all of NJ's wildlife is vulnerable to habitat loss, given the amount of conserved lands in our state, it is difficult to determine whether or not this species' vulnerability to environmental factors (and subsequent threats such as genetic isolation, disease, etc.) would eventually lead to its extirpation (i.e., T to E to extirpated). It seems to me that at this time, we simply do not know enough about this species to determine its status and therefore, it would best fit "U" (U).

*ROUND 3:*

- Only a few known populations. More surveys needed to determine true status (SC)
- It is puzzling that if there is only one known population of a rare or rarely-encountered species, why no one voted "threatened". There is not enough information to call it stable or threatened, and it is not likely that this species will be targeted for special study.(SC)
- Secretive and rare. May be susceptible to pesticide pollution. This should be a SC species, not U as it needs some attention in the form of surveys of historic locations (SC)
- Based on the lack of information and previous comments, I'm sticking with my original assessment of undetermined-unknown for this species (U).
- Based on Round2 comments. Although this species faces similar if not the same threats as other snake species (e.g., habitat loss, fragmentation and lack of management) very little is known about what this species actually needs. As such, it seems "U" listing is appropriate. (U)

*ROUND 4:*

- The SC statements seem persuasive. One of the U statements specified "habitat loss fragmentation, and lack of management". A special concern status for this species (and several other small, secretive species) would identify specific needs and threats. (SC)
- Based on comments from round 3, I feel special concern is the best designation. (SC)
- Smooth earth snakes used to be found in Watchung Reservation and other areas in Morris and Union Counties. Recently only found in Cumberland County. It needs more studies (SC)

**FIVE-LINED SKINK (*Plestiodon fasciatus*)**

ROUND: 4                      CONSENSUS: **YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTE				7		1	
Avg. CONFIDENCE				5.4			

*ROUND 1:*

- Compared to other parts of their range, they are not so common in NJ. I have only seen them along the Appalachian Trail in NJ (SC)
- Appears to be stable in suitable habitat in north and southern NJ (S)
- Appears well distributed in NJ range (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (U)

*ROUND 2:*

- This species appears to be quite prevalent in northern NJ; I have made frequent field observations of young and adults spring – summer during field work in the Kittatinnies and within the Highlands Region. I’ve seen only a few in the Pinelands; perhaps due to my field location versus their habitat preferences. Given the frequency with which I see this species on conserved lands and the habitats where I’ve seen them have not been managed or altered (for the most part), I cannot [currently] justify a “SC” status as it doesn’t appear the species warrants special attention. It appears to be persisting on its own with little (or no) human assistance and therefore, it would best fit “S” (S).
- No mapped locations or other information was provided and round-one comments do not mention any significant threats or population trends so I’m sticking with undetermined-unknown (U).

*ROUND 3:*

- It occurs in high numbers in Northern NJ and is less common in the Pine Barrens. Nevertheless, it appears to be a stable species. (S)
- There has been no evidence of decline in numbers, no evidence of an increase in abundance, no mapped locations given, and no evidence of any specific threats. This is a species that no one sees regularly in many places, except the one commenter who mentioned that they were prevalent in northern NJ. There is clearly not enough information to make a status assessment for this species (U).
- While no/limited information is provided to help inform a status for this skink I’m not aware of any concerns locally or regionally on this species’ conservation and within the herp community is generally considered a locally common/stable species. I agree that in the preferred habitat the skink is regularly encountered. I don’t think additional studies are needed at this time to move to a Stable status. Should the scientific community identify a new threat I’d then recommend a SC or U status, but for now S is the most reasonable. (S)

*ROUND 4:*

- I have very limited personal experience with this species. The comments from people who do know it, don’t provide evidence for SC, T, or E, so it sounds to me that for the present this species can be listed as STABLE. All of these species deserve periodic assessments and in some cases detailed population studies. The assessments have to have enough sensitivity to detect a decline, before a species lands in the ENDANGERED pile. As far as confidence is concerned, I don’t have high confidence in stable. [S]
- Based on the comments from round 3, I agree that more needs to be done to assess populations; however it seems common within its geographical distribution. (S)
- My opinion has not changed= stable (S)

**NORTHERN FENCE LIZARD (*Sceloporus undulatus hyacinthinus*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				7			

ROUND 1:

- Widespread and common in pinelands (S)
- Appears well distributed in NJ range (S)
- Common in the Pine Barrens (S)
- The most common lizard in the Pine Barrens. Absent from northern NJ (S)
- Fence lizards are very common in the Pinelands (S)

**GROUND SKINK (*Scincella lateralis*)**

ROUND: 4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES			6	2			
Avg. CONFIDENCE			5.3	4			

*ROUND 1:*

- Seen infrequently in the Pine Barrens, but small and tends to hang out in the litter. They are a trash lizard farther south. Edge of range (SC)
- Ground skinks are not commonly seen and appear to be in decline (SC)
- Rare, secretive pinelands species. Probably vulnerable to habitat loss and fragmentation (SC)
- Appears well distributed in NJ range (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (U)

*ROUND 2:*

- Limited to the Pine Barrens and not often seen. Disjunct populations in Ocean, Burlington, Atlantic, and Cumberland Counties (SC)
- Rare, secretive pinelands species. Probably vulnerable to habitat loss and fragmentation (SC)
- Haven't seen recently (SC)
- While there haven't been dedicated surveys for this species it seems like they turn upon during opportunistic surveys in the places you expect to find them. I'd choose a U status before going to SC for this skink (S)
- No mapped locations or other information was provided and round-one comments do not mention any definite threats or population trends so I'm sticking with undetermined-unknown (U).

*ROUND 3:*

- Rare, secretive, little studied. Vulnerable to habitat fragmentation. (SC)
- Rare, secretive pinelands species. Probably vulnerable to habitat loss and fragmentation. I will not shift to U status as some reviewers suggest. It is clear to anyone who has spent time in the pines that this unique little lizard is very spotty in its distribution and infrequent in occurrence (SC)
- There appears to be some movement towards SC for this skink based on Round 2 responses. While little information is provided to make a data-based decision, I can see how it's limited Pinelands distribution and the fragmentation of that region equates to a level of ongoing threat and concern.(SC)
- Locally abundant in several Pine Barrens Counties. I see ground skinks in Ocean, Cumberland, Atlantic, and Burlington Counties often. (S)
- There has been no evidence of decline in numbers, no evidence of an increase in abundance, no mapped locations given, and no evidence of any specific threats. This is a species that no one sees regularly in many places. There is clearly not enough information to make a status assessment for this species (U).

*ROUND 4:*

- It sounds like Ground Skink is widely distributed in the Pines, and at least one person knows how to find them. The fragmentation of the Pine Barrens, even under "protection" is fragile. Variances have been granted, that destroy habitat, and supposed replacement by piling sand on various places is hardly evidence-based restoration. [SC]
- Only known from Pine Barrens Counties and has a spotty distribution. Although secretive they can be found/observed with intensive searching. They should not be considered "stable." (SC)
- Based on comments from round 3. (SC)

**BOG TURTLE (*Glyptemys muhlenbergii*)**

ROUND: 1

**CONSENSUS: YES- Endangered**

STATUS	E	T	SC	S	U	NO	NA
# VOTES	8	1					
Avg. CONFIDENCE	6.75	8					

*ROUND 1:*

- Populations have declined in Ocean and Monmouth Co. over the last 20 years. None have been found at historic sites even with intensive Phase II studies. Phase III trapping should be done (E)
- Seems to be one of the few listed species that needs constant intervention and management for its survival in the state (E)
- Not so common, and seem to require early successional fen habitat (E)
- Limited habitat and fragmentation which affects wetlands. Species is vulnerable to those losses (E)
- Wetlands species with spotty distribution. Fragmented, isolated population, habitat subject to degradation and loss (E)
- I understand this species is likely to stay E due to federal listing, but remaining populations are not in immediate threat (T)

**COMMON SNAPPING TURTLE (*Chelydra serpentina serpentina*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				9			
Avg. CONFIDENCE				6.7			

ROUND 1:

- Frequently encounter this species in wetlands in the Pinelands (S)
- Common throughout (S)
- The common snapping turtle adapts well to its environment, especially in disturbed areas. Although is being harvested as a food source, it seems that the population is stable in most locations. In fact, it can even adapt to brackish water environments (S)
- Appears well distributed in NJ range (S)
- A common turtle throughout NJ (S)
- Widespread and common (S)

**EASTERN PAINTED TURTLE (*Chrysemys picta picta*)**

ROUND: 1	<b>CONSENSUS: YES- Secure/Stable</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES				9			
Avg. CONFIDENCE				6.8			

*ROUND 1:*

- I work in the field in central NJ and these turtles adapt well to shallow, freshwater environments. Whenever I conduct aquatic surveys, this is one of the species that is captured with consistent numbers of individuals (S)
- Widespread and common (S)
- I regularly encounter this species in and nearby wetlands in the Pinelands (S)
- Occurs in most clean, unpolluted wetlands, ponds, lakes, and rivers (S)
- Appears well distributed in NJ range (S)
- Common throughout (S)

**SPOTTED TURTLE (*Clemmys guttata*)**

ROUND: 3

**CONSENSUS: YES – Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES		1	7				
Avg. CONFIDENCE		6	5.5				

*ROUND 1:*

- This species has declined throughout NJ. Illegal collecting has removed many adults from the wild. It is not commonly found during Bog Turtle surveys (T)
- Wetlands species with spotty distribution. Fragmented, isolated populations. Habitat subject to degradation and loss. Collecting pressure and roads impacts populations (T)
- While there are still many viable populations, there has been significant range reduction due to threats and many populations are still vulnerable. Species also prone to collection, which can have serious impacts locally (T)
- My observations throughout the past several year were that this species is becoming more difficult to find. Lots habitat is in decline as is the case with other turtle species. More needs to be determined about this species in terms of meta-populations throughout the state. It thrives in the wetlands of southern states (North Carolina). The climate is conducive for this species to do well in NJ. However, we need to determine more about specific habitat locations (SC)
- Not as common as painted turtles, but easily overlook. I see them frequently (S)
- Although I have never searched specifically for this species, I do encounter one or two every year in the Pinelands and they are usually on protected land. Although currently listed as special concern, a status of undetermined seems more appropriate because there is really not enough information to determine whether it's inherently vulnerable, likely to become threatened, or what any potential threats might be (U)

*ROUND 2:*

- Wetlands species with spotty distribution; fragmented, isolated population; habitat subject to degradation and loss. Collecting pressure and roads impact populations (T)
- Less common (T)
- I appreciate that the species is likely doing well on protected lands in both the north and particularly the south, there has been serious reduction of habitat for this turtle in the north over the last 30 years and illegal collection is still a major threat, particularly to the prime southern populations. I could also be convinced of a SC status, but think the definition of T best fits this turtle (T)
- As with the king snake, listing the spotted turtle as a special concern species during the last Delphi process seems to have generated a lot of recent mapped locations. I suspect it is distributed even more widely than the current map indicates. Although no real evidence is given, several round-one comments note declines. Although I see spotted turtles here and there every year, I don't know enough about this species to provide counter arguments, so perhaps special concern is appropriate since there may be threats and not a lot is known about them (SC)
- Habitat in decline and vulnerable (SC)

*ROUND 3:*

- There is a fair amount of literature on threats to spotted turtles and turtles in general and those identified threats (habitat loss, fragmentation, illegal collection, road mortality) are relevant here in NJ. As a species that moves between permanent and semi-permanent ponds, vernal pools, ditches, and streams throughout the season there is ample opportunity for them to be struck on roads, and many roadkills are often observed on roads adjacent to protected land, like Great Swamp NWR or in WMAs in southern NJ. So while preserving land helps, it does not solve all the turtle's problems. I'm aware of an illegal collector who had over 70 spotted turtles that were confiscated in 2008 taken from NJ waters. Collection is still an issue and the species is regularly available in the pet trade. Based on habitat preferences and range this was likely a fairly "common" turtle decades ago, but loss of habitat, particularly uplands for dispersal, has limited big populations to preserved lands. The definition of Threatened fits this species the best.(T)
- High demand in the pet trade. More studies needed to determine their status (SC)
- This species is becoming harder to find, especially in areas where it was once "easily" observed. As a result of disturbance, there needs to be increased population studies and mapping of occurrences. (SC)
- Local populations. Ponds subject to encroachment, development, pollution. Vulnerable to collecting. Some observers report declines. Could merit "threatened" (SC)
- This species is found in too many places in the Pinelands to be considered threatened so I'm sticking with SC.



**WOOD TURTLE (*Glyptemys insculpta*)**

ROUND: 2

CONSENSUS: YES- Threatened

STATUS	E	T	SC	S	U	NO	NA
# VOTES	1	7					
Avg. CONFIDENCE	6	6.29					

ROUND 1:

- Roads, habitat fragmentation, stream pollution, collecting pressure heavily impacts populations (E)
- There are very few remaining viable populations for this species in the state, but those that remain are mostly stable, although face a variety of threats, such as nest predation and road mortality. No immediate threat to long-term persistence (T)
- Decision based on the information provided and limited personal field observations (T)
- Because this turtle is mostly limited to the northern part of the state, seems to prefer higher quality streams with low watershed land use, and is vulnerable to nest predators, a threatened state seems appropriate (T)
- This species has declined at an alarming rate. The XXXXX Creek used to have 200+ turtles. In 2013, only 3 individuals were found in 4 visits (T)
- Limited distribution in NJ, not frequently encountered by me, but I have been hatchlings in northern NJ (T)
- Limited habitat and fragmentation of habitat is factor for this species. It should be left on the threatened list until populations increase over a long period of time. With turtles, they are long-lived and shifts in population trends can take decades (T)

ROUND 2:

- Roads, habitat fragmentation, stream pollution, collecting pressure heavily impact populations (E)
- Limited habitat and does not adapt well to changes in landscape (T)
- While heavily threatened, the definition of E does not relate to wood turtles as no immediate action is needed. The remaining populations of wood turtle in the state can persist for several generations without major manipulation. It is important to increase management of this species, now though, to reduce extinction in the very long term.
- Round-one comments form a consensus on the threats and trends for this species, but no evidence is presented that this species fits the endangered status so I'm going with threatened (T)

**NORTHERN MAP TURTLE (*Graptemys geographica*)**

ROUND: 4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES			4		2	2	
Avg. CONFIDENCE			5.75		6		

*ROUND 1:*

Species was added in Round 2

*ROUND 2:*

- Only found in Delaware River, Delaware Canal, and possibly in streams that empty into the Delaware River. Map turtles are killed by boats and fishermen. Nesting habitat is often disturbed (SC)
- Loss of habitat (SC)
- There are more populations of this turtle in NJ than are formally described and study is warranted to understand current distribution and any threats. Nest predation and road mortality are existing, known threats, but if the distribution appears to be growing it could be considered a stable species (U)

*ROUND 3:*

- High nesting mortality due to meso-predators. Limited distribution (SC)
- There are limited nesting habitat along the Delaware River. Many predators eat their eggs. Adults are killed by motorboats (SC)
- Saw one in D&R canal this May, the first in many years. Can't say they are stable. It's a conspicuous enough species that there should better evidence (U)
- This species is potentially a native to NJ and deserves additional study, particularly with genetics. It's known from the Delaware and associated canal, but also has moved into the Raritan River complex, likely via the old DNR canal. If it was native to the Delaware it has expanded its range and we need to understand more about its origin before establishing a status. While it does suffer the same and similar threats as other turtles (road mortality, habitat loss, etc.) it's unknown if these threats are leading to a decline, since at the time we continue to learn more new areas it occurs. (U)
- Habitats in decline and loss of nesting habitat. (NO)

*ROUND 4:*

- This is not a common species in the Raritan drainage, but it is harvested, so it isn't likely to get more common on its own This is a species in need of some protection. [SC]
- Remain as on the list as their habitat is being disturbed, especially along the Delaware River. (SC)
- Most often seen in DE River, north of Washington Crossing for several miles north. Some Map Turtles have moved into the canal system or have been moved by Fisherman. Not common (SC)
- I can't see how a species on the rise in NJ can be anything other than stable, but in the interest of closure, I'm agreeing with two reviewers that voted for an undetermined status. (U)

**EASTERN MUD TURTLE (*Kinosternon subrubrum subrubrum*)**

ROUND:4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES			2	2	3	1	
Avg. CONFIDENCE			6	5.5	4.6		

*ROUND 1:*

- Mud turtles have dwindled in [our] surveys. In some areas (Monmouth Co), none have been found where they used to be common (SC)
- Common throughout (S)
- This species could be considered SC, but I think we need to know more about its distribution and status. Pinelands populations appear ok, but there may be significant range reduction in central and northern NJ (U)
- Although I have never searched specifically for this species, I do encounter one or two every year in the Pinelands and they are usually on protected land. There is not enough information on which to determine its status (U)

*ROUND 2:*

- this species adapts to changing environments; more specifically, lives in water bodies that have been altered (S)
- Due to the wide range in round-one comments, it is apparent to me that not enough is known about this species to assign a status (U)
- Central and any remaining northern NJ populations should be studied to get a sense of viability in these parts of the state. Pinelands populations appear stable as this turtle and various age classes frequently are found (U).

*ROUND 3:*

- This turtle has declined in Northern and Central NJ. Locally abundance in Cape May and Cumberland County (SC)
- Seems to be adaptable to most lentic water bodies. In our area, can be readily found in oligohaline systems as well as freshwater. (S)
- There has been no evidence of decline in numbers, no evidence of an increase in abundance, no evidence of any specific threats, and only one mapped location was given. There is clearly not enough information to make a status assessment for this species (U).
- I'm not aware of any targeted studies or research on this species in NJ, past or present. (U)

*ROUND 4:*

- I have only seen one individual ( a gravid female) in the past 5 years. Mud turtle have declined throughout most of NJ. Populations are gone from Monmouth County sites where they were common in 1980s era (SC)
- Adapting to changing habitats and is evident in southern New Jersey. It seems to be doing well in altered habitats as well. (S)
- I have been leaning towards SC for this species, but the last round comments, though very brief, don't really support SC or S. It should be an easy species to detect and monitor, but at present I think U is appropriate, not very confident [U]
- There has been no evidence of decline in numbers, no evidence of an increase in abundance, no evidence of any specific threats, only one mapped location was given, and opinions range from SC to S to U. There is clearly not enough information to make a status assessment for this species (U).

**NORTHERN DIAMONDBACK TERRAPIN (*Malaclemys terrapin terrapin*)**

ROUND: 4

CONSENSUS: NO

STATUS	E	T	SC	S	U	NO	NA
# VOTES		2	5	1			
Avg. CONFIDENCE		7	6.8	6			

ROUND 1:

- In Barnegat Bay, we find population densities around marsh habitat, which is the northern diamondback terrapin's prime habitat type. With the loss of over 30% of the original salt marsh throughout Barnegat Bay, and loss of salt marsh habitat throughout other areas in NJ, this species is vulnerable to population declines. Some areas with known terrapin population include the marshes in the Meadowlands complex, along the Gateway National Recreation area at Sandy Hook, Barnegat Bay, Great Bay, Margate, and Cape May County. Although some of the marsh systems within these areas may have high densities of terrapins, it is based on the availability of salt marsh habitat. There are also increased sources of mortality including drowning in commercial-style crab pots, and road mortality of nesting females. In some nesting areas, predation on terrapin nests can be as high as 98% (citation). We are still assessing the loss of nesting habitats at Barnegat Bay as a result of post-tropical cyclone Sandy. Also with sea-level rising and predictive models suggesting loss of coastal shoreline, the loss of terrapin nesting areas may be a long-term problem (SC)
- Numerous but suitable habitat is fragmented, nesting habitat is subject to destruction and disturbance. High human population in occupied range cause heavy mortality (roads) (SC)
- Increased bulkheading and sea-level rise has potential to limit existing nesting sites for species (S)
- These have bounced back in a big way along the coast. They are abundant, but restricted to coastal areas. Main threat is road kill in the nesting season (S)
- Populations have declined in some salt marshes, especially those near the Garden State Parkway and other major roads. They are caught in crab traps and often drown. Never the less, they seem to be stable in suitable brackish water environments (S)
- Reports I've seen suggest that although this species suffers from severe casualty of nesting females overall numbers are stable. This leads me to think of a S status but road is so frequent that it warrants further investigation (U)

ROUND 2:

- Based on round-one comments, the new information provided, some internet searching, and its nesting habits, this species definitely shows inherent vulnerability regarding road kills. The Wetlands Institute provides a map of live and dead on the road finds for a portion of the coastline for 2013 (<http://wetlandsinstitute.org/research/2013-road-patrol-map-3/>). It seems likely to me that this many road kills each year, especially because they are probably reproductive individuals, would be a big problem for the species. Furthermore, it seems that this species can still be harvested as a game species in NJ, which one would hope indicates that it is not in decline. However, due to its inherent vulnerability and the lack of information on its population status, the rank of special concern seems to be most appropriate (SC)
- Species in decline and harvest pressure in New Jersey. Loss of terrapin nesting habitat across estuarine systems in New Jersey. Population declines along southern Island Beach State Park. Increased international demand for food and pet trade makes this species one that needs to be studied more (SC)
- I'd possibly consider T for this species knowing that illegal harvest, crab traps, and roads are major threats to local populations. I do think that existing data needs to be analyzed to detect any trends in population over time (SC)

ROUND 3:

- Nesting habitat is subject to destruction and disturbance. High human population in occupied range cause heavy mortality (roads). Recent increase in commercial trade. Protected in all surrounding states putting commercial hunting pressure on New Jersey populations for increasing Asian food markets. This species needs protection from commercial trade and anthropogenic sources of mortality. Threatened is the most suitable category (T)
- See most recent report (attached) on population status at Barnegat Bay. Since this species is still considered a "game species" in New Jersey, there have been recent harvest events that resulted in the taking of over 3500 (legal) and 800 (illegal) terrapins from New Jersey. Although the 800 were taken illegally, the time of year of the harvest, during brumation, may have adverse effects on those individuals harvested. A loss of over 3500 terrapins may have a significant impact on the future population of terrapins in the waterbody(ies) where these animals were harvested. This added pressure on terrapin populations certainly strengthens my recommendation to consider it a species of special concern. (SC)
- Multiple vulnerabilities. Requires access to sandy nesting areas. These habitats are disturbed, along most of NJ coastlines. ALL ADULTS KILLED ON ROADS ARE FEMALES EITHER BEFORE OR AFTER EGG-LAYING. This takes a major toll, because many nesting areas require crossing roads. The first two weeks of May 2015, researchers at Reeds, encountered over 50 road-killed hatchlings. Some adult females show scars suggestive of encounters with boats. These are the survivors. (SC)
- I'm sticking with special concern (SC).
- I think this species could warrant T, but I've selected SC. Threats are numerous and documented – road mortality, crab pots, harvest – but some data suggests minimal decline in populations so there's a bit of a conundrum. With a SC status, and hopefully a move of this turtle to the nongame list, additional work can be done to assess the priority populations and their viability. Since additional information is needed on impacts of the threats to the populations I've selected SC. (SC)
- Road mortality and crab pots are a major factor for its decline, but population are locally abundant in Southern NJ (S)

ROUND 4:

- I am now highly certain that this species should be considered THREATENED. I was appalled with the data. If this species is indeed protected in neighboring states, there is no reason why NJ should consider it a game animal. Terrapins have enough problem with Fox, Raccoons, Skunks. In some place 100% of nests are dug up----in some cases before the female has finished covering. Is there any evidence that such a harvest is sustainable. Scott McVay wrote an essay “can leviathan long endure so wide a chase.” He was writing about whales, but it sounds appropriate for terrapins in NJ. [T]
- Thirteen years of research indicates a decline in nesting population at N. Sedge Island (Wnek et al. 2014). With the recent harvest of 3522 individual terrapins in late 2013, along with threats including road mortality, the threats to this species are constant. More significantly, the loss of habitat and predicted loss of habitat in New Jersey as a result of sea level rise estimates (Grant F. Walton Center for Remote Sensing and Spatial Analysis, CRSSA, 2013) makes this species more vulnerable to local population declines as a result of loss of nesting habitat. (SC)
- It should be removed from the "game species" status. Harvesting and roadkill will have a long-term adverse impact on NJ populations. Merits SC. (SC)

**NORTHERN RED-BELLIED COOTER (*Pseudemys rubriventris*)**

ROUND: 1	<b>CONSENSUS: YES- Secure/Stable</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES				6		3	
Avg. CONFIDENCE				5.7			

ROUND 1:

- Common in DE river and canals (S)
- This is a very common turtle in the Pinelands (S)
- This large freshwater basking turtle is common in central and southern NJ. It seems to be stable, but should be watched as it is listed as threatened in PA (S)
- This species appears stable in the Pinelands and has distribution in central/north-central part of the state, which may be an extension of the historic range. (S)
- Locally abundant in the Pine Barrens (S)

**EASTERN MUSK TURTLE (*Sternotherus odoratus*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				6			

ROUND 1:

- Common and widespread in streams (S)
- Appears well distributed in NJ range (S)
- A common turtle throughout NJ (S)
- Common (S)
- This is a very common turtle in pinelands (S)

**EASTERN BOX TURTLE (*Terrapene carolina carolina*)**

ROUND: 3

**CONSENSUS: YES – Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			7	1			
Avg. CONFIDENCE			6.3	6			

*ROUND 1:*

- While seemingly secure in Pinelands based on numbers observed, significant impact from roadkill, ag operations, and nest predation. Central and northern populations appear depressed and fragmented and threats in pinelands suggest a threatened population. Collection likely still major threat (T)
- This species suffers from over-collecting, predation, and road mortality. More research is needed, but it has clearly declined in past 25 years. (SC)
- Box turtles are similar to terrapins in that are found in pockets of dense populations throughout the state. There have been declines and fragmentation in forested areas, which could indicate an overall decline in this species. More genetic studies need to be conducted in terms of populations (SC)
- Widespread, many recent observations throughout the state (S)
- Abundant, main threat is road kill in the nesting season (S)
- Although this species is listed as special concern, the information provided show that it is distributed throughout much of the state. No information was provided to indicate that it is inherently vulnerable or could become threatened, although I sometimes see them DOR. I encounter this turtle fairly regularly throughout the pinelands. A status of stable seems more appropriate (S)

*ROUND 2:*

- While this turtle may appear secure in the Pinelands the habitat for it has been severely depleted in the central and northern parts of the state, worse than for spotted turtle because of the box turtle’s generalist preferences. It’s increasingly rare to encounter younger age class box turtles in heavy ag or suburban areas and threats of Ranavirus, road mortality, continued collection, and habitat loss are impact viability in 2/3 of the state (T)
- People collect; declined in Pine Barrens and in suburbia (SC)
- Loss of woodland habitat, couple with limited home range makes this species one to better understand how changes in landscape can affect populations (SC)
- Although there are some threats to this species, such as roads, it remains widely distributed in NJ and my colleagues and I find them alive on a regular basis all over the Pinelands area. Unlike some of the round-one commenters, within the Pinelands area, a colleague of mine and I have seen about the same number of box turtles each year for the past 25 years, with no obvious evidence of decline. I have also seen several individuals in my neighborhood every year for over 12 years. A status of stable seems to best fit this species (S).
- Widespread, many recent observations throughout the state (S)

*ROUND 3:*

- Road mortality and collection for pet trade are limited factors from this long-lived turtle species (SC)
- I agree with other panelists that populations in the Pine Barrens seem secure and stable, but this isn’t the case with central and northern NJ. A severe loss of habitat has led to anecdotal declines in 2/3 of the state. No formal studies of box turtles across the state have been performed to document this decline, but the decline of box turtles is noted across the range and the threats to them are not absent in NJ. As a suburban-tolerant species, I believe most populations that persist in developed areas are functionally extinct. I don’t believe we can call a species stable if it’s declining in the majority of the state. (SC)
- Loss of woodland habitat. As a result of habitat fragmentation, this species is at risk it requires both wetlands and uplands as part of its life cycle. With more habitat disruption, this species is more vulnerable and more studies need to be conducted to make more accurate population assessments. (SC)
- Road mortality, fragmentation, collection threaten populations (SC)
- At least special concern, and on its way to threatened in central and northern NJ. Just uncommon in southern NJ. Sprawling suburbia has been the major threat.  
Road kills were a big problem, particularly the Jersey Barriers which impeded crossing. Road kills are density-dependent, so still a problem in southern NJ. A population of 46 individually identified Box Turtles on a 60 acre tract in Somerset, was eliminated by development. 12 were found killed during construction. None have been seen since 2013. This is a microcosm of what is happening. Not to mention casual collecting (SC)
- Although currently listed as special concern, the nearly statewide distribution of relatively recent sightings shown on the ENSP map demonstrates that this species is “not in any immediately foreseeable danger of becoming endangered, threatened, or special concern,” which is part of the definition of secure-stable. I think a status of stable best fits this species (S).



**ATLANTIC GREEN TURTLE (*Chelonia mydas*)**

ROUND: 3

**CONSENSUS: YES - Endangered**

STATUS	E	T	SC	S	U	NO	NA
# VOTES	6	1				1	
Avg. CONFIDENCE	6.6	6					

*ROUND 1:*

- Based upon federal ranking (E)
- Green sea turtles are undergoing pressures including capture as a food source and harvest of eggs for consumption. The estimated population is between 85,000 and 90,000 adult females worldwide, but there are other threats including loss of nesting habitats. In fact, areas that were high in nesting densities like the Dry Tortugas and Cayman Islands are limited in terms of nesting (Spotila 2004). There are projects that support a sustainable “harvest” of green sea turtles. The largest nesting population is found at Tortuguero in Costa Rica with over 22,000 females annually (Spotila 2004). Despite this dense nesting population, this species has demonstrated a 48% to 67% decline in mature females over the past three generations and is trending downward, thus are listed as endangered (IUCN 2004). Although not common inshore in New Jersey, this species is capable of being found along our coastal region on occasion, but mostly south of the mid-Atlantic states. (E)
- All sea turtles in NJ are extralimital, for now (NO)

*ROUND 2:*

- Based upon Federal ranking (E)
- Federal listing of endangered should warrant state endangered listing (E)
- Globally this species is still considered Threatened, with no nesting habitat in New Jersey and this being a primarily migrating species in New Jersey, this species should be afforded protection (T)

*ROUND 3:*

- There are few confirmed records of nesting on NJ beaches (E)
- Federally endangered species (E)
- I believe because this species is federally threatened it doesn’t automatically mean it becomes state endangered, but comments from Round 1 make a good argument for state endangered listing and I will defer to those comments. (E)
- Based upon Federal ranking it would be threatened, but much rarer than that in NJ (E)
- Sea turtles are vulnerable to fishing pressures; however, this species is vulnerable to submerged aquatic vegetation and threats along migration routes (T)

**ATLANTIC LOGGERHEAD TURTLE (*Caretta caretta*)**

ROUND: 1

**CONSENSUS: YES- Endangered**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES	5					4	
Avg. CONFIDENCE	7.2						

*ROUND 1:*

- This species still faces threats including mortality in fisheries operations. There have been an increase in nesting areas across the east coast of the United States, especially along the Carolina Coastline. In fact nesting areas are shifting further north in Virginia possibly as a result of Global Climate Change. As a species that may come inshore to feed along the New Jersey Coastline, I feel that this species should remain as an endangered species (E)
- Based upon federal ranking (E)
- All sea turtles in NJ are extralimital, for now (NO)

**ATLANTIC LEATHERBACK TURTLE (*Dermochelys coriacea*)**

ROUND: 1

**CONSENSUS: YES- Endangered**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES	5					4	
Avg. CONFIDENCE	7.2						

ROUND 1:

- Based upon federal ranking (E)
- Despite efforts to protect this species, leatherbacks are still globally an endangered species and will require added protection. A great threat is that this species is found in major fishing areas in the North Atlantic (E)
- All sea turtles in NJ are extralimital, for now (NO)

**ATLANTIC HAWKSBILL TURTLE (*Eretmochelys imbricata imbricata*)**

ROUND: 1

**CONSENSUS: YES- Endangered**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES	5					4	
Avg. CONFIDENCE	6.8						

ROUND 1:

- The turtle is not common off our coastline and is vulnerable (E)
- Based upon federal ranking (E)
- All sea turtles in NJ are extralimital, for now (NO)

**KEMP’S RIDLEY TURTLE (*Lepidochelys kempii*)**

ROUND: 1	<b>CONSENSUS: YES- Endangered</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES	5					4	
Avg. CONFIDENCE	7.2						

ROUND 1:

- Based upon federal ranking (E)
- The intakes at Oyster Creek Powerplant report several Kemp's Ridley drowned each year since the species uses Barnegat Bay (E)
- Kemp’s Ridley turtles are responding to protection measures. Although the number of nesting events is increasing, the population is still low and vulnerable. This turtle is threatened by fisheries mortality and lack of nesting areas. Since Rancho Nuevo Mexico has the highest density of nesting female Kemp’s Ridley turtles, this species is especially vulnerable to factors that threaten nesting habitat. As a result, this species should remain as endangered. (E)
- All sea turtles in NJ are extralimital, for now (NO)

**NORTHERN CRICKET FROG (*Acris crepitans*)**

ROUND: 4                      CONSENSUS: **YES- Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			6	1		1	
Avg. CONFIDENCE			5.8	5			

*ROUND 1:*

- In my opinion, this species has been declining drastically throughout NJ. While it is locally abundance in small colonies, it is absent from any areas where the habitat appears to be suitable. It is listed as "endangered" in New York (SC)
- I only know of a couple of localities—Cape May and the Great Swamp. Clearly at the northern range limit, but could expand with climate change (SC)
- I do not believe that cricket frogs actually occur at the five Burlington County locations shown on the volunteer maps. It looks like those sites are along Route 532 in Wharton and Brendan Byrne State Forests and cricket frogs do not occur in that area of the Pinelands. However, they are common in some on-stream and off-stream sites in western Mullica River tributaries, such as Hays Mill Creek, Cooper Branch, Wildcat Branch, Pump Branch, Great Swamp Branch, and Hammonton Creek, as well in tributaries of the Great Egg Harbor River, such as XXXXX Creek, XXXXX, and XXXXX Creek (S)
- Appears well distributed in NJ range (S)

*ROUND 2:*

- This frog has drastically declined in NJ (Morris County). The Great Swamp and Cumberland County are strongholds, otherwise very rare! (T)
- This frog is appearingly stable in the Pinelands region, but declines in NY state should caution us to begin to monitor populations, if just in the north. Upland habitats on non-protected lands continue to be lost to development and LU change (SC)
- Declining in places I sample (SC)
- This species seems to be stable at the sites where I hear it in southern NJ (S)

*ROUND 3:*

- While this frog may be locally abundant in a few counties, populations have declined in many areas where it was known in the past (SC)
- From round 2 it is stable in southern NJ and declining in northern NJ. Habitat loss, endocrine disrupting chemicals, contribute to declines. (SC)
- This species can be found in the Pinelands in degraded impoundments and some natural ponds, shallow excavations, and stormwater basins. It appears stable in the places that I have found them over the years. I see no evidence of declines and am sticking with stable (S).
- Similar to my thoughts with box turtle and several other species, there is stable population in the Pine Barrens, but there are unknown or declining populations in the central and northern parts of the state. The documented declines in NY state just over our border should lead NJ to have some concern about understanding impacts to our remaining northern NJ populations. That said, the populations of cricket frogs I'm aware of in the northern part of the state are there from year to year, but no proper monitoring has occurred. ( SC)

*ROUND 4:*

- IT is reassuring to read that this species seems adaptable and locally common, but its decline in other parts of the State does not bode well. [SC]
- Based on comment from round 3, this species should be designated as special concern.
- This little frog has declined in most historic locations. Only locally abundant in Cape May, Cumberland and Morris Counties. It should be a SC species. Endangered in NY (SC)

**AMERICAN TOAD (*Anaxyrus americanus*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			1	5		3	
Avg. CONFIDENCE			6	6.8			

ROUND 1:

- A common toad throughout northern NJ (S)
- Appears well distributed throughout its NJ range. Based on distribution/occurrence maps provided and personal ( & associates') observations during field season (S)
- Common in western NJ (S)
- Common in northern NJ in vernal ponds (S)

**FOWLERS TOAD (*Anaxyrus fowleri*)**

ROUND: 2                      **CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			1	7			
Avg. CONFIDENCE			7	6			

*ROUND 1:*

- Common in Pinelands, possibly different population in Appalachians (S)
- One of the most frequently encountered anurans in the Pinelands, which is likely due to its ability to breed in habitats that range widely in hydrologic permanence from puddles to lakes, can breed at sites with and without fish, and is commonly found even in systems impacted by development and agriculture(S)
- A common toad in the Pine Barrens and certain portions of Bergen and Passaic Counties (S)
- Common in southern NJ, in vernal and permanent ponds (S)
- Appears well distributed in NJ range. Based on distribution/occurrence maps provided and personal (& associates') observations during field season. (S)

*ROUND 2:*

- Lots of breeding (S)
- Two round-one reviewers recommended special concern for this species, but they did not provide any comments for others to evaluate in round two. I reiterate my round-one comment that this species is: "One of the most frequently encountered anurans in the Pinelands, which is likely due to its ability to breed in habitats that range widely in hydrologic permanence from puddles to lakes, can breed at sites with and without fish, and is commonly found even in systems impacted by development and agriculture (S)." For this second round, I would add that this species breeds in ditches and reservoirs of active and abandoned cranberry farms (Wen 2010), which cover thousands of acres of southern NJ. Fowler’s toads also regularly breed in stormwater basins, and are one of two species found by McCarthy and Lathrop (2011) to successfully metamorphose from stormwater basins. Stormwater basins are a habitat on the rise in NJ. When driving around the Pinelands at night, Fowler’s toads can be seen all over the sand and paved roads. See the attached map for the location of 284 wetlands where Fowler’s toads were heard breeding in the Pinelands Area (green shading shows preserved land). There is no way this species should be listed as special concern. It is stable (S).
- Common in Pinelands. Possibly different population in Appalachians (S)
- Seems to be adapting to changes (S)
- Appears stable in the Pinelands and in habitat in the north suitable for the toad.(S)



**PINE BARRENS TREEFROG (*Hyla andersonii*)**

ROUND: 2		CONSENSUS: YES- Threatened					
STATUS	E	T	SC	S	U	NO	NA
# VOTES	1	7					
Avg. CONFIDENCE	6	6.3					

*ROUND 1:*

- Limited habitat and fragmentation is a factor that impacts this species. With loss of critical habitat, this species will certainly undergo further declines (E)
- Pinelands species subject to habitat loss and degradation. Spotty distribution, potential isolation and low genetic diversity (E)
- Relictual distribution, but more abundant in NJ than anywhere else in its range. Can be locally abundant. Habitat specialist, doesn't breed successfully in ponds with fish (T)
- Appears to be declining and may need to be listed as endangered again (T)
- While there are some populations in the core of the pine barrens that are locally abundance, many colonies around the periphery have drastically declined. They are far less abundance in 2014 than they were 20 years ago for many reasons. Clearly is a "threatened" species, just look at the range maps (T)
- A very abundant frog in the pinelands. Pinelands wetlands are protected to the same extent regardless of whether or not pine barrens treefrogs are present, whereas wetlands outside the region are not. Therefore, a status of threatened would be needed to protect this species in wetlands outside of the pinelands (T)
- Limited range in NJ and threats from roads and changed land-use have reduced historic range (SC)

*ROUND 2:*

- Pinelands species. Subject to habitat loss and degradation. Spotty distribution, potential for isolation and low genetic diversity ( E)
- Limited habitat (T)
- This species does not fit the definition of an endangered species. I agree with the round-one commenters that recommended a threatened status (T)
- Notable losses of habitats and populations in areas on the periphery of the Pine Barrens (T)
- Edge of range species, but species state range has been reduced since the 1950s. Range has contracted to mostly protected lands in the Pinelands whereas it used to occur perhaps as far north as Middlesex County historically. Within the Pines, the range is fragmented by roads and other barriers (T)

**COPE'S (SOUTHERN) GRAY TREEFROG (*Hyla chrysoscelis*)**

ROUND: 3	<b>CONSENSUS: YES - Threatened</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES	1	7					
Avg. CONFIDENCE	4	6					

*ROUND 1:*

- Pinelands species, subject to habitat loss and degradation. Limited distribution as known, potential for isolation and low genetic diversity. Extent of range undetermined (E)
- Limited distribution in only 4 NJ Counties: Ocean, Atlantic, Cape May, and Cumberland. It tends to be a coastal species but does occur in the edge of the pine barrens. It should remain as an "endangered" species (E)
- Limited range in NJ and threats from roads and changes in land-use have reduced historic range (T)
- Sighting information seems to suggest that this species is increasing in number in NJ. Locally abundant in the lower part of Cape May County. Range seems to be expanding (T)
- This species is currently listed as endangered, but it does not appear to be in immediate danger or likely need immediate action to avoid extinction in the state. It seems to be expanding its range northward and can adapt to human-made habitats, such as shallow excavated ponds and stormwater basins. A threatened status seems more appropriate (T)
- I've not seen or heard it in NJ, but I know it has been found in far south NJ. Have much experience with it in North Carolina, where it is common (NO)

*ROUND 2:*

- Pinelands species. Subject to habitat loss and degradation. Limited distribution as known. Potential for isolate and low genetic diversity. Extent of range undetermined (E)
- This species does not fit the definition of an endangered species. I agree with the round-one commenters that recommended a threatened status (T)
- Species changing in range and loss of habitat (T)
- Edge of range species, but species state range has been reduced since the 1950s. Range has contracted to mostly protected lands in the Pinelands whereas it used to occur perhaps as far north as Monmouth County historically. Within the Pines and Cape May, the range is fragmented by roads and other barriers. The definition of E does not match with this frog. No immediate action is required. There has been no active management for Cope's and it still persists (T)

*ROUND 3:*

- Habitat loss and it seems that there is no increase in population (E)
- I have high confidence that this species is at least threatened, but much lower confidence that it doesn't warrant endangered. Threatened status should afford some needed habitat protection. Systematic documentation of frog populations would clarify the status for this and several other species (above and below) (T)
- Since additional population have been found in Ocean County, it may be more abundant than previously thought. However, is it still a rare frog (T)
- In contrast to a round two comment, this is not a Pinelands species. It also does not fit in the endangered category because no immediate action is required to avoid extinction and no active management has been keeping it alive in NJ all these years. The species actually appears to be expanding its range further into the Pinelands by utilizing excavated habitats and stormwater basins that are created for development, especially development along Route 72. The status of threatened fits this species best (T)
- Pinelands species. Subject to habitat loss and degradation. Limited distribution as known, potential for isolation and low genetic diversity. Extent of range undetermined (T)
- Some very good comments in the last round and I agree with T status as the definition most aligned with the species. As an edge of range animal it is limited in NJ due to range, but it is a resilient species throughout the remainder of its US range. I'd even consider SC because of its edge of range status, but we have an obligation to protect the remaining populations and existing threats are enough to warrant T (T)
- Within its NJ range this species is widespread and locally abundant. It inhabits degraded wetlands and intermingles with human dwellings. Ranges seems to be restricted more by N. Gray's distribution than the availability of suitable habitat (T)

**GREEN TREEFROG (*Hyla cinerea*)**

ROUND: 4

CONSENSUS: NO

STATUS	E	T	SC	S	U	NO	NA
# VOTES			1	1	4	2	
Avg. CONFIDENCE			6	6			

*ROUND 1:*

- This species was only recently documented in the state and it appears its occurrence in the state is the result of a range expansion. Therefore, it does not seem to fit the definition of threatened or endangered because its population (in New Jersey) is not trending toward “decline,” which suggests that the conditions for this species are not deteriorating. Instead, its population seems to be increasing in the state (S)
- A new species to NJ, we need to learn more about its distribution before assigning status. Seemingly stable in areas where it occurs (U)
- Since the green treefrog appears to have gone unnoticed in Southern NJ for decades, and is only found in a few locations along the DE River, it should be afforded some protection and research. More surveys are needed (U)
- Species does not seem to be indigenous to NJ (NA)
- How they got to NJ is anyone’s guess. I doubt they were previously overlooked, because the area where they were found has been heavily studied in the past herpetologists. I know about them only from Karena DiLeo’s discovery (NO)

*ROUND 2:*

- Marginal (S)
- This treefrog was historically reported from NJ back in 1940, and may have gone unnoticed. Only a few populations along the Delaware River are currently known (SC)
- Seems to be found less often in known habitats (SC)
- I agree with a round-one commenter who said, “This species was only recently documented in the state and it appears its occurrence in the state is the result of a range expansion. Therefore, it does not seem to fit the definition of threatened or endangered because its population (in New Jersey) is not trending toward “decline,” which suggests that the conditions for this species are not deteriorating. Instead, its population seems to be increasing in the state (S).”
- We are so early in investigating the origins and distribution of this frog. Warrants some additional study to map range, but otherwise any newly colonizing species really can only align with stable or U (U)

*ROUND 3:*

- This species was historically known from NJ and has been recently re-discovered. It warrants more study (SC)
- Few, small populations are known. It is not clear whether these persisted historically or represent recent range extinctions. Part of the suite of frogs which need to be studied. Systematic surveys of vocal species like frogs is more practical for secretive snakes (SC)
- A relatively recent addition to the state, found in marginal to degraded habitats, likely only to increase over time in the number of sites found, and very little is known about its distribution or population status. A status of undetermined-unknown fits best (U).
- Please see comments from Round 2. This is likely a new species to NJ due to expanded range so does not meet SC or above criteria of declining. While new records are coming into the state documenting current range I’d consider this a U status, but by next Delphi I think a S would be warranted. With consensus I think S could make sense now, too. (U)

*ROUND 4:*

- Based on comments from round 3 and that there needs to be more studies on its distribution. (SC)
- Because I have not studied this species in NJ, I yield to U status. It was historically known from NJ. See Percey Morris' book. (U)
- Previous comments point to U or S, but little is known so I’m sticking with U. (U)
- I never feel very confident about a U status, but this is clearly a case. I agree that it warrants more study. But SC doesn’t seem to guarantee more study. If it is indeed a recent colonist, then someone is likely to study and monitor this striking species. If it a resident that is on the verge of disappearing, then it needs strong protections quickly. [U]

**NORTHERN GRAY TREEFROG (*Hyla versicolor*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				6.6			

ROUND 1:

- Common treefrog in NJ and adapted to human-altered habitats (S)
- Common and widespread (S)
- This is a common species throughout NJ. Gray treefrogs can be heard calling in May and June in all suitable habitats (S)
- Appears well distributed in NJ range (S)
- Common in central and north NJ, and on the northwestern edge of the Pine Barrens (S)

**AMERICAN BULLFROG (*Lithobates catesbeianus*)**

ROUND: 1		CONSENSUS: YES- Secure/Stable						
STATUS	E	T	SC	S	U	NO	NA	
# VOTES				8		1		
Avg. CONFIDENCE				7				

ROUND 1:

- Bullfrogs are common in NJ and are found in most ponds, lakes, streams, and retention basins (S)
- Appears well distributed in NJ range (S)
- Common (S)
- Based on distribution/occurrence maps provided, personal observations of prevalence during spring amphibian breeding migration, and at pools/wetlands during late spring-early summer months (S)
- Common and widespread (S)
- I question some of the locations on the volunteer map in east-central Burlington County because bullfrogs are not typically found in that part of the Pinelands. This species is a common frog in NJ, adapted to human-altered habitats, and invasive in the Pinelands (S)

**NORTHERN GREEN FROG (*Lithobates clamitans*)**

ROUND: 1                      **CONSENSUS: YES- Secure/Stable**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				7.1			

*ROUND 1:*

- Common frog in NJ and adapted to a variety of habitat types, including human-altered habitats (S)
- Most common frog in NJ (S)
- One of our most common frogs (S)
- Appears well distributed in NJ range (S)
- Common throughout (S)

**PICKEREL FROG (*Lithobates palustris*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				6.5			

ROUND 1:

- Commonly occurs in degraded impoundments on the Toms River, XXXXX Brook, XXXXX Brook, and XXXXX in the Barnegat Bay watershed; the Mullica River, XXXXX Creek, XXXXX Brook, and XXXXX Brook in the Mullica River watershed; and Southwest Branch of the Rancocas Creek and Barton Run in the Rancocas Creek watershed (S)
- Widespread throughout NJ in most suitable wetland habitats (S)
- Appears well distributed in NJ range (S)
- Common, widespread (S)
- Common throughout (S)

**SOUTHERN LEOPARD FROG (*Lithobates sphenoccephalus*)**

ROUND: 4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES			2	6			
Avg. CONFIDENCE			4.5	6			

*ROUND 1:*

- Limited range in NJ and threats from roads and changed land-use have reduced historic range. NJ population represents unique outlier population similar to other Pinelands reptiles and amphibians (T)
- Common frog in Pinelands (S)
- This species should be evaluated since it has declined in some suitable habitats in central and southern NJ (S)
- Common throughout southern NJ (S)

*ROUND 2:*

- Status questionable now that a recent new species has been discovered (*Rana [Lithobates] kauffeldi*) in northern part of its range(SC)
- I disagree with the round-one commenter that suggested a threatened status at the highest level of certainty for this species. Southern leopard frogs are extremely abundant in southern NJ. See the attached map showing the location of 293 wetlands where southern leopard frogs were heard breeding in the Pinelands. They are known to breed in natural ponds, human-made ponds, small impoundments caused by road crossings, large on-stream lakes, and ditches, bogs, and reservoirs of active and abandoned cranberry farms (Zampella and Bunnell 2000, Wen 2010). The green shading on the attached map denotes preserved land and shows that most of the sites where southern leopard frogs breed are located on protected land. As can be seen by the maps provided earlier, there are also many other coastal plain wetlands where this species breeds, and there are many other southern NJ wetlands within its range that have not been surveyed where this species likely breeds. There is no evidence of a recent decline. This species should be listed as stable (S)
- Shifting range of this species and loss of habitat (SC)
- We are so early in investigating the origins and distribution of this frog. Warrants some additional study to map range, but otherwise any newly colonizing species really can only align with stable or U (SC)

*ROUND 3:*

- Status questionable now that a recent new species has been discovered (*Rana [Lithobates] klauberi*) in northern part of range (SC)
- I agree that this frog is widespread in various wetlands on the NJ coastal plain. It has also declined in some that I am familiar with. (S)
- This species is found at hundreds of protected wetlands and is not declining. It is stable (S).
- Because the Pine Barrens may now represent the northern most distribution of this frog in the US, similar to many other PB species, like pine and corn snakes, or the other Pine Barrens frogs, there should be consideration of NJ's role in conserving it here, as it is a unique resident. Because of the current evidence that it appears stable in the places it exists I'll agree with a current stable status, but we need to keep in mind the areas it's been lost from or declined from like parts of Middlesex County and other locales outside the protected Pine Barrens. Simply because a species may be stable in the Pine Barrens does not mean there shouldn't be a goal of also trying to recover the species to areas it historically occurred outside of the current preservation area. Continued monitoring would benefit this frog. (S)

*ROUND 4:*

- Where I live in Central NJ there is virtually no such thing as a Stable species. Virtually every single species has declined in the past 30 years. So I would have trepidation and limited confidence for the S status, even though people more familiar with its habitat consider it stable. However, Leopard Frogs have proven that they can disappear completely without a known reason----disappearance from Long Island,, for example. [SC].
- I can see no reason to worry about this species so I am assigning a status of stable. (S)
- Populations seem to be stable in numerous geographical areas of the state. (S)
- My opinion has not changed. Common in southern NJ (S)



**WOOD FROG (*Lithobates sylvaticus*)**

ROUND: 1	<b>CONSENSUS: YES- Secure/ Stable</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				6.4			

ROUND 1

- Appears well distributed in NJ range (S)
- This species is locally abundant and has a widespread distribution in NJ (S)
- Appears well distributed in NJ based on distribution/occurrence map provided and general statewide distribution, and personal (& associates') observations of their prevalence during spring migrations. (S)
- Based on distribution/occurrence map provided and general statewide distribution, and personal observation of their prevalence during spring migrations (S)
- Common in vernal ponds throughout (S)
- Common and widespread (S)

**CARPENTER FROG (*Lithobates virgatipes*)**

ROUND: 4

CONSENSUS: **YES- Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES		1	7				
Avg. CONFIDENCE		5	5.6				

*ROUND 1:*

- Pinelands species subject to isolation, fragmentation, and loss; limited number of recent locations (T)
- In my opinion, carpenter frogs are declining in the Pine Barrens. Distribution surveys are needed to help document remaining populations in southern NJ (T)
- Limited range in NJ and threats from roads and changed land-use has reduced historic range. NJ population represents unique outlier population similar to other Pinelands reptiles and amphibians (T)
- Common in permanent ponds in the Pine Barrens (SC)
- This species is commonly found at high-quality sites in the Pinelands and has been extirpated from sites impacted by development and upland agriculture, especially sites that contain bullfrogs and non-native fish, such as largemouth bass, bluegill, and black crappie. The stocking of non-native fish by the Division of Fish & Wildlife poses a serious concern for this species (SC)

*ROUND 2:*

- Declining in Pine Barrens (T)
- Pinelands species subject to habitat isolation, fragmentation, and loss. Limited number of recent locations (T)
- I think there's some justification to move this to T, but SC makes sense now. Another edge of range frog. Studies show negative impact of watershed development on distribution of carpenter frog and these impacts, such as change in pH, can happen even within protected area (SC)
- See the attached map showing the location of 273 wetlands where carpenter frogs were heard breeding in the Pinelands. They are known to breed in natural ponds, human-made ponds, small impoundments caused by road crossings, large on-stream lakes, and reservoirs of active and abandoned cranberry farms (Zampella and Bunnell 2000, Wen 2010). Carpenter frogs prefer more permanent-water ponds and impoundments. Although there is no evidence of a recent decline, this species is limited to high-quality Pinelands habitats and is sensitive to land-use and water-quality changes and the subsequent invasion by non-Pinelands frogs and fish (Bunnell and Zampella 2008). Although it has been eliminated from many suitable habitats in the past, as can be seen from the green shading on the attached map which denotes preserved land, most of the sites where carpenter frogs breed are located on protected land. Since Pinelands rules restrict development in most of these areas, these habitats should not experience the land-use, water-quality, non-native species impacts. As can be seen by the maps provided earlier, there are also many other coastal plain wetlands where this species breeds, and there are many other southern NJ wetlands within its range that have not been surveyed where this species likely breeds. Although carpenter frogs are found at many sites, the species should probably stay listed as special concern due to its vulnerability to human-related watershed impacts and lack of surveys in many areas of southern NJ (SC)
- Seems to be found in habitats where expected (S)

*ROUND 3:*

- Pinelands species subject to habitat isolation, fragmentation, and loss (T)
- "Gone" best describes my experience with Carpenter Frogs. But it is apparently widespread in NJ, but declining. I see no evidence that it is stable, and over all of its NJ range, it doesn't appear to be threatened---yet (SC).
- Not declining, but still vulnerable to watershed impacts where they occur (SC).
- Some good comments last round to justify SC status. Similar to my comments on southern leopard frog, this frog deserves continued monitoring to evaluate trends. Because it is more habitat sensitive than southern leopard frogs the SC status makes more sense here. (SC)

*ROUND 4:*

- This species deserves attention. It has disappeared from some ponds where it was loud and vocal decades ago. I don't know if the decline was sudden some time, or gradual. I didn't see the argument for Stable. I agree that it is subject to habitat loss and probably pollution. Wetlands conversions for fruit growing, could be disastrous. [SC]
- Based on comments from round 3 and local observations, there are threats to this species including habitat loss and alteration. (S)
- Restricted to the ponds and bogs of the Pine Barrens. Only locally abundant in some water bodies. Not common in some wetlands that appear suitable=SC. (SC)

**SPRING PEEPER (*Pseudacris crucifer*)**

ROUND: 1                      **CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			1	7		1	
Avg. CONFIDENCE			6	7			

ROUND 1:

- Common and widespread (S)
- The trash frog of eastern North America (S)
- This species is commonly found in NJ (S)
- A common treefrog in NJ (S)
- Appears well distributed in NJ based on distribution/occurrence map provided and general statewide distribution, and personal (& associates') observations of their prevalence during spring migrations (S)

**NEW JERSEY CHORUS FROG (*Pseudacris kalmi*)**

ROUND: 4	CONSENSUS: <b>YES- Special Concern</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES			6	1	1		
Avg. CONFIDENCE			5.5	5			

*ROUND 1:*

- NJ represents the likely stronghold for the global population for this frog. Pinelands and southern NJ populations seem secure but limited distribution in the northern, potentially depressed over the years, undetected. Worth further investigation (SC)
- I know of multiple extirpated populations lost due to habitat loss (SC)
- Over the last 20 years, I have not heard chorus frogs calling in wetlands and vernal pools where they used to be. They have declined (SC)
- This frog is common in southern NJ and along the periphery of the pinelands and can be found in human-made wetlands, such as stormwater basins (S)

*ROUND 2:*

- Declining in places I survey (SC)
- NJ represents the likely stronghold for the global population for this frog. Pinelands and southern NJ populations seem secure but limited distribution in the northern, potentially depressed over the years, undetected. Worth further investigation, but threats to northern populations or existing local extirpations should place this in at least the SC status (SC).
- Habitat in decline (SC)
- I know of about 30-40 sites in southern NJ that support the NJ chorus frog. I have heard them regularly at a few sites that I have visited each year for the past 20 years so they appear to be stable at those sites. Although I've heard them calling from ponds, I've also heard them calling from borrow pits, ditches, flooded farm fields, and stormwater basins, which indicates that they are capable of adapting to a variety of human-made habitats. Some of the sites that support this species are in areas surrounded by heavy human development and others are in the middle of blueberry fields. This also shows that they don't necessarily need undisturbed, forested breeding conditions. NJ chorus frogs aren't always detected in calling surveys because they sometimes call during the daytime and not at night, are easily spooked, are usually low in abundance, and have a relatively short cold-season calling window. Since the recent genetic research has shown that the chorus frogs in the northern part of the state are also NJ chorus frogs, essentially this species has just doubled the amount of area in NJ where it has the potential to be. The map provided shows the species is widely distributed in NJ and all of the records shown are relatively recent. Other than the obvious round-one statement that "I know of multiple extirpated populations lost due to habitat loss," which can apply to any species in the state, no real evidence of declines was presented in the first round. Therefore, a status of stable seems most appropriate to me (S)

*ROUND 3:*

- This is a vernal pond breeder for the most part. They also breed in man-made burrow pits that are not protected (SC)
- Primarily an NJ species, stable in some wetlands, declining elsewhere. It is reported to have wide habitat tolerance for varied wetlands, but loss of wetlands still a problem. Chemicals (endocrine disruption) and disease still an unknown hazard. Needs more study (SC)
- I'm sticking with stable (S).
- Other than throughout the Pinelands and southern NJ, I'm aware of one population in East Brunswick and another in the XXXXX Meadows. There may be another in XXXXX, NJ, but otherwise they are not regularly occurring from Middlesex County and north. The security of the species in the Pinelands does not equate to security in the remainder of the state. Lemmon et al (2007) redefine the NJ chorus frog range and NJ appears to be a major global stronghold. Northern NJ may be the limit of the US range. Threats to breeding habitats and upland loss should have us concerned in unregulated parts of the state should lead us to the SC status as we investigate more of its NJ range in the north. (SC)

*ROUND 4:*

- Problem similar to Cricket Frogs. Small populations disappearing. One person sticking to "stable" means that it is locally common. But this may also be a unique and vulnerable population. (SC)
- My opinion has not changed=SC. (SC)

**ATLANTIC COAST LEOPARD FROG (*Rana kauffeldii*)**

ROUND: 4

CONSENSUS: NO

STATUS	E	T	SC	S	U	NO	NA
# VOTES			2		5	1	
Avg. CONFIDENCE			6		5.4		

*ROUND 1:*

- This new leopard frog has such a small known distribution that it merits some research and protection. More data is needed (SC)
- Widespread surveys for this species are just beginning (S)
- This newly named frog appears stable in areas where it is known from, but we are still learning more about its distribution (U)
- Not enough information is known about this frog to assign a status. Ongoing survey effort should shed light on its distribution in NJ (U)
- It is rumored to be the leopard frog in the Great Swamp, and other places along the central N-S axis of NJ. Probably not rare, but not recognized till now. "Feinberg's Frog" (NO)

*ROUND 2:*

- It has limited, narrow distribution and only breeds in large open-canopy wetlands. These are vulnerable to human activities and succession. It will be very vulnerable to collectors (T)
- Distribution and status questionable. Surveys needed to separate species locations (SC)
- Seems to adapt to changes in habitat (S)
- Intensive calling surveys are needed to determine the distribution and abundance of this frog (U)
- The Atlantic Coast Leopard Frog – the frog is showing up more and more in places now that researchers are looking for it more closely. I think the state should have better information to guide status at the end of 2015 when a two year project on them wraps up (U)
- Based on the round-one comments and the current study being done on this species, no one knows much about this frog, its potential vulnerabilities, or its distribution or population status in NJ, so I don't know how it could be listed as anything other than undetermined-unknown (U)

*ROUND 3:*

- Relatively little is known about the habitat requirements or tolerance of this species. But what is known includes shallow, open canopy, large wetlands, which are few and far between and vulnerable to development. Leopard Frogs assumed to be this species have disappeared from Long Island. Extensive monitoring is now underway, and more information will be available, but it is VERY vulnerable because of its rather restricted habitat requirements. Not found in areas I thought it would be in NJ near Staten Island sites. Newly discovered, but with distinctive voice, it deserves study. I have high confidence that it is at least SC, with some concern that its survival would be better served by threatened status (SC)
- Distribution and status questionable. Surveys needed to separate species locations (SC)
- Since the species has now been formally described, it might be best to call it the Atlantic coast leopard frog (*Rana kauffeldii*). This species has recently been found in several southern NJ sites, all of which are on protected land. It is likely more widespread, but has a short calling window and is found in habitats not usually surveyed for frogs. Obviously we know very little about this species as it has been overlooked in the past. More will be known about this species after the two-year study is over. A status of undetermined-unknown fits best (U).
- We're learning a lot more about the Atlantic Coast leopard frog as the years progress. Its distribution is from the Delaware River south of Trenton down around the tip of Cape May and then up the Atlantic Coast until at least Forsythe. It's also in the Great Swamp NWR and wetlands north, at the Walkkill River NWR, and throughout the Meadowlands. The frog appears tolerant of a variety of environmental and water quality conditions. I'm call this a stable frog, but as we are still learning more about its needs and are in the closing phases of research I'll select U for now. (U)
- This frog may be more common once surveys have been conducted to determine their status (U)

*ROUND 4:*

- I am confident that this species newly described species is of SPECIAL CONCERN I am not confident that it isn't threatened. Despite its distinctive voice it is known from few locations in NJ. Perhaps this is lack of familiarity. Leopard Frogs disappeared from Long Island. True we don't know nearly enough about this species, but we don't know anywhere that it is stable and have no reason to assume that is merely overlooked. [SC]
- I don't see how it could be anything other than U. (U)
- Not much is known about populations of this species in New Jersey. More needs to be determined to determine a status. (U)
- More data are needed to determine its true status (U)

**EASTERN SPADEFOOT (*Scaphiopus holbrookii*)**

ROUND: 2		CONSENSUS: YES- Special Concern					
STATUS	E	T	SC	S	U	NO	NA
# VOTES			6		1	1	
Avg. CONFIDENCE			5.7		6		

*ROUND 1:*

- Limited range in NJ and threats from roads and changes in land-use have reduced historic range. NJ population represents unique outlier population similar to other Pinelands reptiles and amphibians. If there are populations outside of the Pinelands they are not reported. The species historically occurred outside of Pinelands (SC)
- Appears to be declining in locations where it was previously common (SC)
- Its exact distribution and population size is poorly understood. Spadefoots are not easy to survey because they do not have a set calling season. They typically call when there is one inch or more of rain. More data is needed (SC)
- Locally abundant in outer coastal plain (S)
- A secretive toad that is locally abundant, but likely has a patchy distribution. Although little information has been provided, I have found them breeding in puddles, flooded farm fields, flooded forests, ditches, and stormwater basins. I normally find them in breeding in some of the same places from year to year. On May 1, 2014, after the very heavy rains on April 29, spadefoot toads were reported to be calling at numerous sites in various parts of Burlington and Monmouth counties (U)

*ROUND 2:*

- Limited habitat in many areas (SC)
- Limited range in NJ and threats from roads and changes in land-use have reduced historic range. NJ population represents unique outlier population similar to other Pinelands reptiles and amphibians. If there are populations outside of the Pinelands they are not reported. The species historically occurred outside of Pinelands and we just had a Warren County record in Spring 2014 (SC)
- I disagree with the round-one comments about the negative impacts of roads and land-use changes on spadefoots. I'm sure many spadefoot habitats have been eliminated through time in NJ, but humans have also created many spadefoot habitats. Almost all of the spadefoot sites I have found are in human-altered landscapes where they breed in human-made habitats such as farm fields, puddles, ditches, road-side swales, and stormwater basins. Because they seem to do well in human-altered landscapes and each reviewer probably knows only of a handful of locations in the state, an undetermined/unknown status seems most appropriate (U)

**JEFFERSON SALAMANDER (*Ambystoma jeffersonianum*)**

ROUND: 2      **CONSENSUS: YES- Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			7			1	
Avg. CONFIDENCE			5.1				

*ROUND 1:*

- Limited range in NJ and major threats to breeding habitat, which is only loosely protected by regulations. Also suffer from road mortality in some areas. Genetically very similar to blue-spotted salamander and should be consider same status since impossible to tell difference visually. Genetics show inter-breeding (T)
- I haven't seen that many in NJ, most have been members of the triploid complex (SC)
- Spotty, isolated populations. Vernal pools vulnerable (SC)
- This salamander has limited distribution in NJ. Only found in 3 counties (SC)

*ROUND 2:*

- Based on the comments in round one about a limited distribution and the threats to vernal pools, it seems that the current status of special concern is warranted for this species (SC).
- Spotty, isolated populations. Vernal pools vulnerable (SC)
- Habitat in decline (SC)
- Seems to be near consensus at the SC status (SC)

**BLUE-SPOTTED SALAMANDER (*Ambystoma laterale*)**

ROUND: 2

**CONSENSUS: YES- Endangered**

STATUS	E	T	SC	S	U	NO	NA
# VOTES	6	1				1	
Avg. CONFIDENCE	5	7					

*ROUND 1:*

- Merits full protection as an "endangered" species due to its small distribution, habitat loss, and pollution via run-off from roads and parking lots into its breeding ponds (E)
- Only known from a couple of spots in NJ (E)
- Limited range in NJ and major threats to breeding habitat, which is only loosely protected by regulation. Also suffer from road mortality in some areas. Genetically very similar to Jefferson salamander and should be considered same status since impossible to tell the different visually. Genetic show regular interbreeding. If listing only for genetically pure populations, only one has been identified and I would then elevate to Endangered (T)
- Spotty, isolated populations. Vernal pools vulnerable (SC)

*ROUND 2:*

- Rare species with limited habitat (E)
- Very small distribution; declining (E)
- Very few spotty, isolated populations. Vernal pools vulnerable (E)
- Based on the severely restricted distribution in NJ, the location of most of the sites in the state, and some round-one comments, it seems that this species should stay listed as endangered (E)
- Again, given the read of the E definition it seems like T is the best fit. No major management of blue-spotted pools has ever occurred in the state and near-annual surveys of priority populations indicate continued viability, i.e., egg masses, juveniles, evidence of recruitment. So no immediate action is required to prevent this species from becoming extinct (T)



**SPOTTED SALAMANDER (*Ambystoma maculatum*)**

ROUND: 4

CONSENSUS: NO

STATUS	E	T	SC	S	U	NO	NA
# VOTES			3	4		1	
Avg. CONFIDENCE			5.3	4.75			

*ROUND 1:*

- Common in some areas, but vernal pools vulnerable (SC)
- Well distributed and appear stable, but major threats to breeding habitat and threats from road mortality. Worth keeping a watch (SC)
- Those most abundant *Ambystoma* in NJ- mostly from central and northwestern part of the state (S)
- One of our most common Ambystomid salamanders in central and northern NJ. Counted over 500 egg masses in Bergen and Passaic Counties in 2013 (S)

*ROUND 2:*

- Common in some areas but vernal pool vulnerable (SC)
- While the breeding habitats are under constant threat of development, both private and public land, this is the most common vernal pool breeding salamander and appears stable in the range. But because of inherent vulnerability of the breeding sites as described in the SC definition, I selected SC. (SC)
- A little more common, but habitat in decline (SC)
- Seems to be a well-distributed and common northern NJ salamander (S)

*ROUND 3:*

- While our most common Ambystomid breeder in NJ the vernal pools on private land are constantly under threat of development and current regulations can always secure them. And if so, upland buffers are insufficient to protect the nonbreeding habitat. (SC)
- Common in some areas, but vernal pools vulnerable (SC)
- Common in Northern NJ Counties. Rare in Southern part of the state (S)
- This is an iconic species, such that towns close roads to protect the salamanders going to and from their breeding ponds. There is still substantial roadkill. Vernal ponds represent a vulnerable habitat that require protection. In central NJ at least, this seems to be stable (S)
- Stable (S).

*ROUND 4:*

- I am rarely confident that any species is stable, but in the few areas I know it, does seem to be thriving. At least one community regularly closes a road on warm, wet spring nights when the Salamanders are moving. This may only save a few dozen, but it represents an effort of stakeholders to manage a local resource. (S)
- Based on comments from rounds 2 and 3, this species seems to be stable in its distribution and doesn't warrant a special concern status. (S)
- Common in northern NJ, as well as some locations in central NJ. Rare or absent in the Pine Barrens. Locally abundant in Northern Highlands of the State. They are not restricted to vernal pools for breeding (S)

**MARbled SALAMANDER (*Ambystoma opacum*)**

ROUND: 2		CONSENSUS: YES- Special Concern					
STATUS	E	T	SC	S	U	NO	NA
# VOTES			7	1			
Avg. CONFIDENCE			5.5	5			

ROUND 1:

- Appears to be in decline (T)
- Well distributed and appear stable, but major threats to breeding habitat and threats from road mortality. Worth keeping a watch (SC)
- Populations have dwindled in most of NJ. It is rarely observed during herptile surveys. Many areas where abundant now lacks them. More surveys and distribution data are needed (SC)
- Spotty distribution, isolated populations, vernal ponds vulnerable (SC)
- Not as widespread as *A. maculatum*, but populations seems stable (S)
- Although this species is currently listed as special concern, a status of undetermined would be more appropriate because there is not enough information to determine whether it's inherently vulnerable, likely to become threatened, or what any potential threats might be. I suspect it has a wider distributed than is currently known. With only casual effort, this salamander was found at seven ponds in the southern part of the Pinelands this past fall (U)

ROUND 2:

- Spotty distribution (SC)
- Evidence to support the round-one comments regarding declines in this species is sparse. I suspect targeted surveys would reveal many more locations for this species throughout the state. However, what was apparent from the round-one comments is that little is known about the distribution and population status of this species. Therefore, a status of special concern seems to still fit this species (SC)
- Habitat in decline (SC)
- Spotty distribution, isolated populations, vernal ponds vulnerable (SC)
- The inherent vulnerability of the breeding sites leads me to a SC status, following the SC definition. This species does have a wide state distribution, but it is spotty and threats like fragmentation make population susceptible to decline (SC)

**EASTERN TIGER SALAMANDER (*Ambystoma tigrinum tigrinum*)**

ROUND: 1

**CONSENSUS: YES- Endangered**

STATUS	E	T	SC	S	U	NO	NA
# VOTES	7	1				1	
Avg. CONFIDENCE	6.4	6					

*ROUND 1:*

- Seems to need management for its survival in the state. One threat appears to be the stocking of mosquito fish and mummichogs in its breeding ponds in Cape May, including some excavation near the newly created tiger habitat (E)
- Only a few localities in NJ. Not really all that common south of NJ, either (E)
- Species with limited distribution. Subject to habitat isolation, fragmentation, and loss. Small populations subject to possible loss of genetic diversity (E)
- This species has become a rarity in NJ. Populations have declined in most of its historic range. Recent records are only in 2 Counties- Cape May and Atlantic. This is clearly an "endangered" species (E)
- I could see this species stay at E but I'm not sure if the threat is immediate. While some local populations have benefited from recent management, many appeared viable and stable for many years without management (T)

**NORTHERN DUSKY SALAMANDER** (*Desmognathus fuscus fuscus*)

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES				7		2	
Avg. CONFIDENCE				6.1			

ROUND 1:

- Common and widespread (S)
- Widespread in central and northern NJ. [We] often find this salamander during surveys (S)
- Appears well distributed in NJ range (S)
- Common (S)

**ALLEGHENY (MOUNTAIN) DUSKY SALAMANDER (*Desmognathus ochrophaeus*)**

ROUND: 3

**CONSENSUS: YES - Undetermined**

STATUS	E	T	SC	S	U	NO	NA
# VOTES					5	3	
Avg. CONFIDENCE					5.5		

ROUND 1:

- I'm aware of only one or two locations this salamander, but NJ also presents a range edge. Worth investigating more before assigned status (U)
- Have never found this species in NJ (U)
- I have never been convinced that I have found one in NJ (NO)

ROUND 2:

- It is abundantly clear from the round-one comments that no one knows much about the distribution or population status of this salamander, therefore it should be listed as undetermined/unknown (U)
- I'm aware of only one or two locations this salamander, but NJ also presents a range edge. Worth investigating more before assigned status (U)

ROUND 3:

- Only found in Northern NJ. Little is known about their abundance (U)
- I agree that the status is Unknown. But that along gives me concern (U)
- I'm not sure why this wasn't a consensus last time. There is little to no information about this species. A status of undetermined-unknown fits best (U)
- The only known populations I'm aware of are some small upper Delaware River drainages. Very edge of range species here in NJ and perhaps more study is warranted before calling it something else (U)

**NORTHERN TWO-LINED SALAMANDER (*Eurycea bislineata*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

STATUS	E	T	SC	S	U	NO	NA
# VOTES				7		2	
Avg. CONFIDENCE				6.3			

ROUND 1:

- Common and widespread (S)
- A very common stream salamander. [We] find this species often during surveys in central and northern NJ. We have found this species in streams flowing to the DE in XXXXX region during bog turtle surveys in 2005 (S)
- Appears well distributed in NJ range (S)
- Common (S)

**LONGTAIL SALAMANDER (*Eurycea longicauda longicauda*)**

ROUND: 2

**CONSENSUS: YES- Threatened**

STATUS	E	T	SC	S	U	NO	NA
# VOTES		6				2	
Avg. CONFIDENCE		5.8					

*ROUND 1:*

- Some solid populations for this species remain, but historic range has been reduced. Also very specific habitat requirements that are under threat from land-use change (T)
- Reduced number of observation over past several years. Spotted, fragmented distribution (T)
- Recent records indicate it only occurs in Sussex and Warren Counties. Historically it was known from 7 northern Counties (T)
- I think these are more common on limestone areas in northwestern NJ than are realized. They are only active on the surface for a short time in May, then disappear into the limestone/karst. When they are only the surface in Big Spring, they are abundant (SC)

*ROUND 2:*

- See fewer now in traditional places (T)
- Based on the limited habitat and distribution, it appears that this species should remain listed as threatened (T).
- Reduced number of observations over past several years. Spotty, fragmented distribution (T)
- While I do agree that longtails are likely more abundant in limestone areas of Sussex and Warren than we'd think from observation maps, there are many areas of Somerset and Hunterdon that no longer support this species. Threats to fairly unregulated overwintering and breeding habitats are constant in both public and private settings. I think because we have some good data on occurrences, but threats still pervasive, the T status is warranted (T)

**NORTHERN SPRING SALAMANDER (*Gyrinophilus porphyriticus porphyriticus*)**

ROUND: 2

**CONSENSUS: YES- Special Concern**

STATUS	E	T	SC	S	U	NO	NA
# VOTES			6			2	
Avg. CONFIDENCE			2				

*ROUND 1:*

- With such a limited distribution in NJ (only known from Warren and possibly Sussex Counties). This salamander should be considered a "threatened" species (T)
- Peripheral species? Very few locations (SC)
- Seen infrequently by me in the Del Water Gap. May be more abundant than I think (SC)
- I'm aware of only one reliable population of this salamander, but NJ also represents a range edge. Worth investigating more before assigning (U)

*ROUND 2:*

- Peripheral (SC)
- With such a limited distribution and a lack of information about their population status or even threats, this species should remain listed as special concern (SC)
- Peripheral species? Very few locations (SC)
- I can agree with the group to move more toward SC. There is some information on threats to warrant SC, but I'd still like to see more survey work done (SC)



**FOUR-TOED SALAMANDER (*Hemidactylium scutatum*)**

ROUND: 4	CONSENSUS: <b>YES- Secure/Stable</b>						
STATUS	E	T	SC	S	U	NO	NA
# VOTES				7		1	
Avg. CONFIDENCE				5.1			

*ROUND 1:*

- Appears to be in decline (SC)
- [We] have found four-toed salamanders quite often in north and south NJ. Appears to be stable (S)
- A fairly well distributed species throughout the state (S)
- Not a lot of experience with this one... have seen it in the Pine Barrens (S)
- Although I have never searched specifically for this species, I have only seen a few of these over the years and no information was provided for them (U)

*ROUND 2:*

- Based on round-one comments, a status of stable seems appropriate for this species (S)
- I'm unaware of major threats to the species and will stick with S, as it appears well distributed and is often found when surveyed for (S).

*ROUND 3:*

- This salamander is widespread throughout NJ. Abundant in the Pine Barrens (S)
- Round two comments, are two one sentence lines for stable, and no comments from two people listing special concern. I am at a loss to form an opinion on this species.(NO)
- This species has a wider variety of breeding habitats than obligate vernal pool breeders so slightly less threat and I'm unaware of anecdotal or documented declines.(S)
- Based on round-one and round-two comments, a status of stable seems appropriate for this species (S).

*ROUND 4:*

- My first thought was to go with U, but that Stable-Sayers, although one liners, suggest that this species may indeed be stable in Northern NJ, at least for the foreseeable future. [S]
- Based on comments from round 3, this species seems to be stable in its distribution and doesn't warrant a special concern status. (S)
- This is a stream-side breeder where the female stays with her eggs until they hatch. The larvae drop into the water when they hatch. There are numerous records from most counties in NJ. They are common in the Pine Barrens= stable. (S)

**RED-SPOTTED NEWT (*Notophthalmus viridescens viridescens*)**

ROUND: 1	CONSENSUS: YES- Secure/Stable						
STATUS	E	T	SC	S	U	NO	NA
# VOTES				6		3	
Avg. CONFIDENCE				6			

ROUND 1:

- Appears well distributed in NJ range (S)
- Common and widespread (S)
- Newts are most common in northern NJ, but it also occurs in Cape May and in small populations along the coast. Only found 1 individual in Berkeley Twp., Ocean County (S)
- Common in northern NJ (S)

**REDBACK SALAMANDER (*Plethodon cinereus*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES				8		1	
Avg. CONFIDENCE				6.75			

ROUND 1:

- Seems to be a common salamander even in the pinelands area. I often find them when I look for them (S)
- Very Common (S)
- Most common salamander in the state (S)
- Appears well distributed in NJ range (S)
- May be the most abundant terrestrial vertebrate in eastern North America (S)

**SLIMY SALAMANDER (*Plethodon glutinosus glutinosus*)**

ROUND: 2

**CONSENSUS: YES- Secure/Stable**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES				4		4	
Avg. CONFIDENCE				5.75			

ROUND 1:

- Appears to be more common in northern NJ. Probably absent from Pine Barrens (S)
- I see it regularly in northwestern NJ (S)
- Appears well distributed in NJ range (S)

ROUND 2:

- I have no experience with this salamander, but based on round-one comments, a status of stable might be the best fit (S)
- Frequent in northern NJ (S)
- Species appears stable in the areas it's supposed to be (S)

**EASTERN MUD SALAMANDER (*Pseudotriton montanus montanus*)**

ROUND: 4	CONSENSUS: NO						
STATUS	E	T	SC	S	U	NO	NA
# VOTES	3				1		4
Avg. CONFIDENCE	6.3				2		7.5

*ROUND 1:*

- Very rare, no recent observations, possibly extirpated (E)
- Only 2 records? [We] have never found this species in NJ, even though we have searched the historic locations in Atlantic and Burlington Counties. It may be extirpated in NJ (E)
- No recent sightings of this species despite some targeted surveys. I believe it has been extirpated from the state (NA)
- Limited information that this species ever occurred in NJ in great numbers and records are dated. Unlikely occurs in NJ and unlikely it can re-colonize without human assistance (NA)
- I suspect the original record from the Black Run in Medford, as well as the newer record from Atlantic County, were misidentifications. I found northern red salamanders in the Black Run system when doing fish surveys (NA)
- Can't say that I have seen it in NJ (NO)

*ROUND 2:*

- Very rare, no recent observations, possibly extirpated (E)
- The definition for NA makes the most sense given what we know: The species does not occur in New Jersey with regularity or predictability (NA)
- May be extirpated- no recent records (NA)
- I believe this species is extirpated from NJ (NA)
- Based on round-one comments, no one has seen this salamander in NJ. I would continue to argue that the two sightings are likely misidentifications of northern red salamanders and that the mud salamander never occurred in NJ. Therefore, this species fits the definition of not applicable perfectly (NA)

*ROUND 3:*

- Extremely rare, only two observations. Similarly true in adjacent PA. This is a highly secretive species. Surveys of historic sites needed. Comment regarding all sightings as misidentified red salamander is incorrect, at least for original specimen (E)
- This is a complicated case. One person suggests that NJ records are mis-identified. This calls into question the documentation of the records. Three mention probably extirpated (including one person who voted for E). If it never occurred then NA is correct. Two people believe it is or may be extirpated without providing documentation of efforts made to discover it, even in the sites from which it was recorded. I think that NA is a most serious determination. I would have 0 confidence in that. Likewise if I voted for E, my confidence level would be about a 2. I am going with U---not enough information (U)
- Based on round-one and round-two comments, this species fits the definition of not applicable perfectly (NA)
- Not Applicable (NA) Species has historically occurred in NJ (was historically indigenous to NJ), but there have been no confirmed records for more than 30 years AND there is very little to no chance of re-colonization without direct and purposeful human assistance. ("extirpated" in Biotics database). The original sightings of this species are suspect and I'd like to have genetics confirm the species. It could have been an incorrect ID all along. Looking at range maps, very unlikely this species could recolonize NJ at any point. All points to NA (NA)
- I think it is extirpated in NJ. If any are still here, someone needs to confirm a population. Only two individuals were ever found. One by Roger Conant (NA)
- I believe this species to be extirpated from the state(NA)

*ROUND 4:*

- Should remain listed as an endangered species. The comment from round 3, stating that this species may have been "extirpated from the state" says a lot. There have been no comments about any increase in its limited distribution in New Jersey. In fact, there should be a greater effort in determining the status of breeding individuals and critical habitat requirements. (E)
- I can't support an extirpated determination without years of effort in known locations and similar habitat. Just this summer a new and thriving population of Checkered White butterflies was rediscovered at multiple sites in South Jersey, after the Delphi group had leaned strongly towards extirpated. However the ENDANGERED argument isn't strong. I suggest a concerted effort in appropriate or known habitat to locate or relocate this species., at which time a special round could be completed for this and a few other species [U].
- This species still fits the category of NA the best (NA)
- Under contract with NJDEP, HA conducted drift fence surveys in the Medford area (Roger Conant's record) and in Atlantic County Park area. No mud salamanders were captured, but several other species of salamander were found in traps, including northern red salamanders. Mud salamanders may still be present but very Rare. (NA)

**NORTHERN RED SALAMANDER (*Pseudotriton ruber ruber*)**

ROUND: 1

**CONSENSUS: YES- Secure/Stable**

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STATUS	E	T	SC	S	U	NO	NA
# VOTES				7		1	
Avg. CONFIDENCE				6			

ROUND 1:

- Maybe in decline (S)
- I think it is fairly common, seen it in multiple places (S)
- I often find larval and adult forms of this salamander when conducting fish surveys in small headwater streams in the Pinelands (S)
- This is a common salamander throughout NJ. [We] find them regularly in northern, central and southern NJ (S)
- Appears well distributed in NJ range (S)

### APPENDIX III REFERENCES

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**Appendix IV. Non-consensus spp. with ENSP staff recommendation:**

ORDER	SCIENTIFIC NAME	PRIMARY COMMON NAME	CURRENT STATUS <sup>1</sup>	CONSENSUS STATUS	ENSP REC	ENSP notes on recommended status	ENSAC REC
Anura	<i>Hyla cinerea</i>	Green treefrog	none	none	U	Recent arrival/colonizer, insufficient time to assign status. Common and secure within range outside of NJ. Plurality vote for U. No majority vote for any category. Voting distributed among four different status categories suggests most appropriate status is “unknown / undetermined.”	U
Anura	<i>Lithobates sphenoccephalus</i>	Southern Leopard Frog	S	none	S	Insufficient information and weight of voting to justify change in status.	S
Anura	<i>Rana kauffeldi</i>	Atlantic Coast Leopard Frog	none	none	U	Majority of voting for U or NO, coupled with fact that species is newly recognized/described with poorly understood conservation needs and status suggests that U is most appropriate status.	U
Caudata	<i>Ambystoma maculatum</i>	Spotted Salamander	S	none	SC	ENSP believes that loss or weakening of regulatory protection of isolated wetlands on which this species depends has increased vulnerability such that SC status is appropriate.	SC
Caudata	<i>Pseudotriton montanus montanus</i>	Eastern Mud Salamander	T	none	U	Species described in NJ with only 2 records. No documented occurrences since despite directed efforts. U is appropriate status in transition to determining if extirpated (or never occurred).	T
Squamata	<i>Carphophis amoenus amoenus</i>	Eastern Wormsnake	U	none	U	Insufficient information provided to justify a change in status. Voting distributed among three different status categories suggests most appropriate status is “unknown / undetermined”	U
Squamata	<i>Lampropeltis getula getula</i>	Eastern Kingsnake	SC	none	SC	Insufficient information provided to justify a change in status.	SC
Squamata	<i>Opheodrys vernalis</i>	Smooth Greensnake	U	none	SC	Five votes for T or SC comprise a majority suggesting that that species is of conservation concern.	SC
Squamata	<i>Pantherophis guttatus</i>	Corn Snake	E	none	E	Insufficient information provided to justify a change in status. Evidence provided did not indicate improved status.	E
Squamata	<i>Regina septemvittata</i>	Queen Snake	E	none	E	Insufficient information provided to justify a change in status.	E
Squamata	<i>Scincella lateralis</i>	Ground Skink	U	none	SC	Majority vote for SC status and SC status definition allows for uncertainty of status.	SC
Squamata	<i>Virginia valeriae</i>	Smooth Earthsnake	U	none	SC	Majority vote for SC status and SC status definition allows for uncertainty of status.	SC
Testudines	<i>Graptemys geographica</i>	Northern Map Turtle	none	none	U	Insufficient information and weight of voting to justify SC. Uncertainty re. origin of this spp. in NJ. No majority vote for any category. Voting distributed among 3 status categories suggests most appropriate status is “unknown / undetermined.”	U
Testudines	<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle	S	none	U	Insufficient information and weight of voting to justify SC. No majority vote for any category. Voting distributed among four different status categories suggests most appropriate status is “unknown / undetermined”	U
Testudines	<i>Malaclemys terrapin terrapin</i>	Northern Diamondback Terrapin	SC/Commercial	none	SC	Majority of votes indicate some level of conservation concern. Insufficient information provided to justify a change in status.	SC

<sup>1</sup> Status codes: E=Endangered, T=Threatened, SC=Special Concern, S=Stable/Secure, U=Unknown/Undetermined