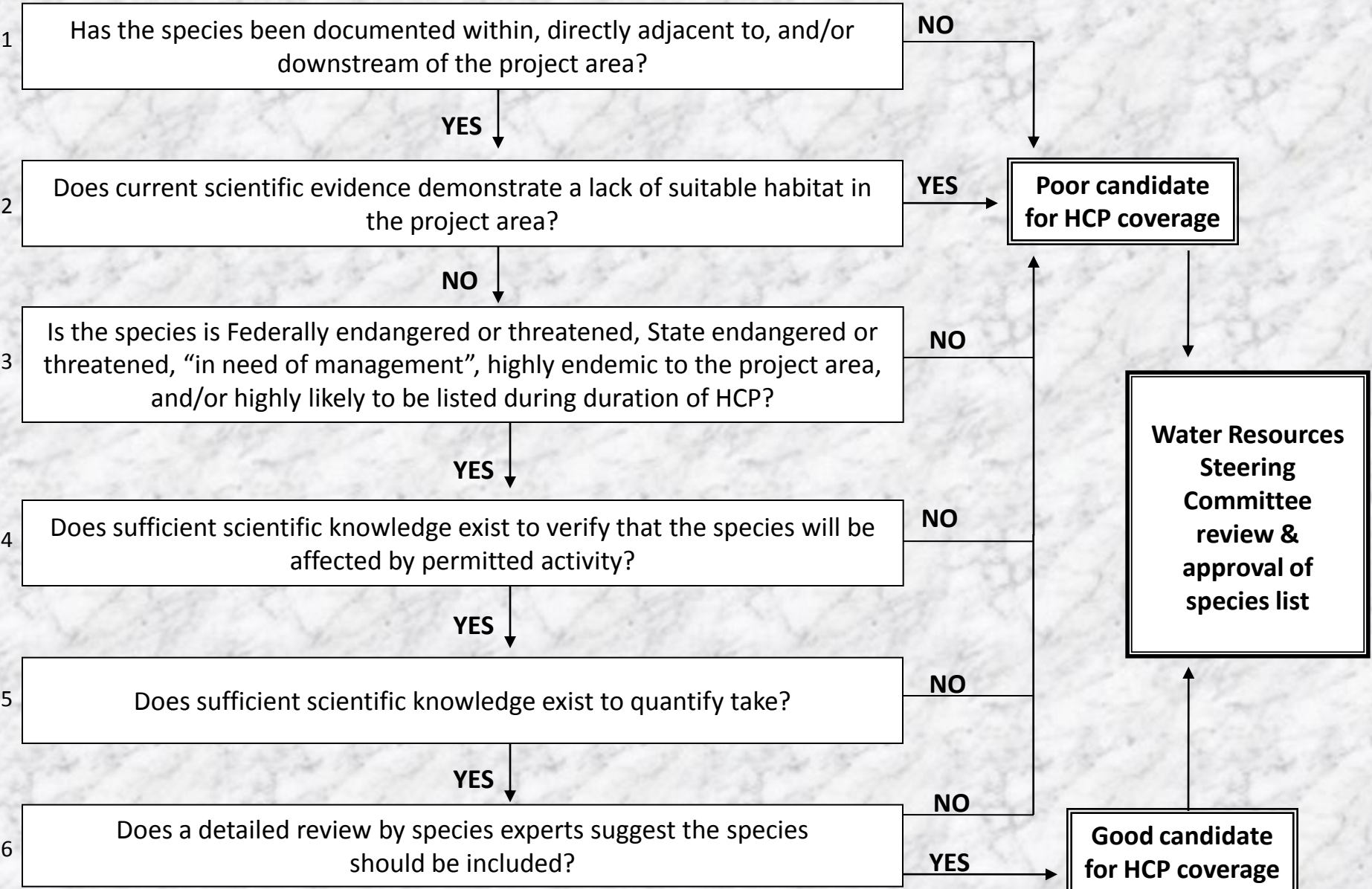


Proposed Covered Species Lists: Round 1

Malissa Davis
WRHCP SC Meeting
August 25, 2010

Covered Species Decision Tree



Applicant Lists of HCP Species

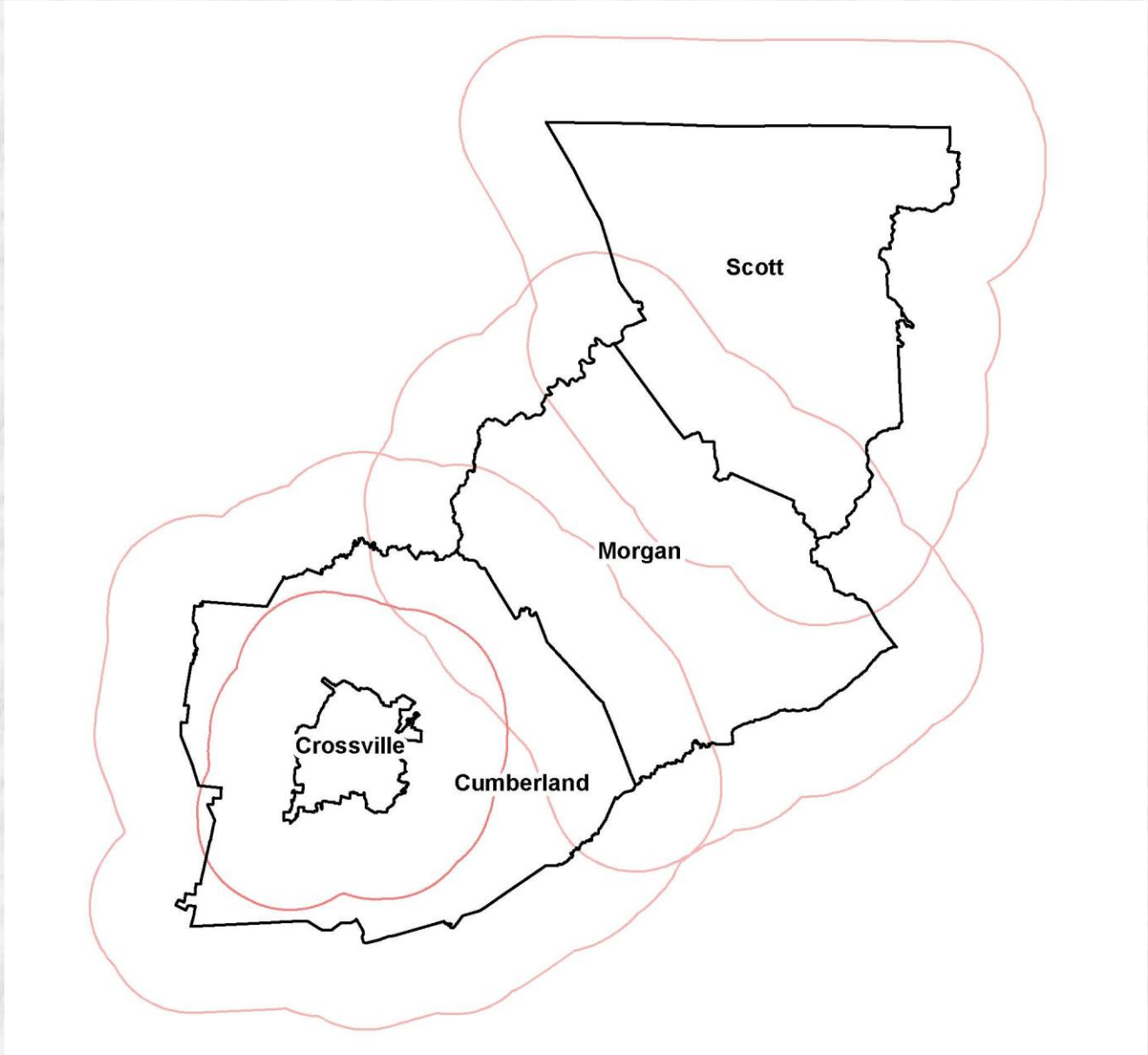
Species Information Used

- Occurrence records
 - TN Natural Heritage
 - Individual biologists
- Designated Critical Habitat (from USFWS)
 - Cumberland elktoe, Cumberlandian combshell, oyster mussel, purple bean, spotfin chub

Selection Area

Each jurisdiction with buffer:

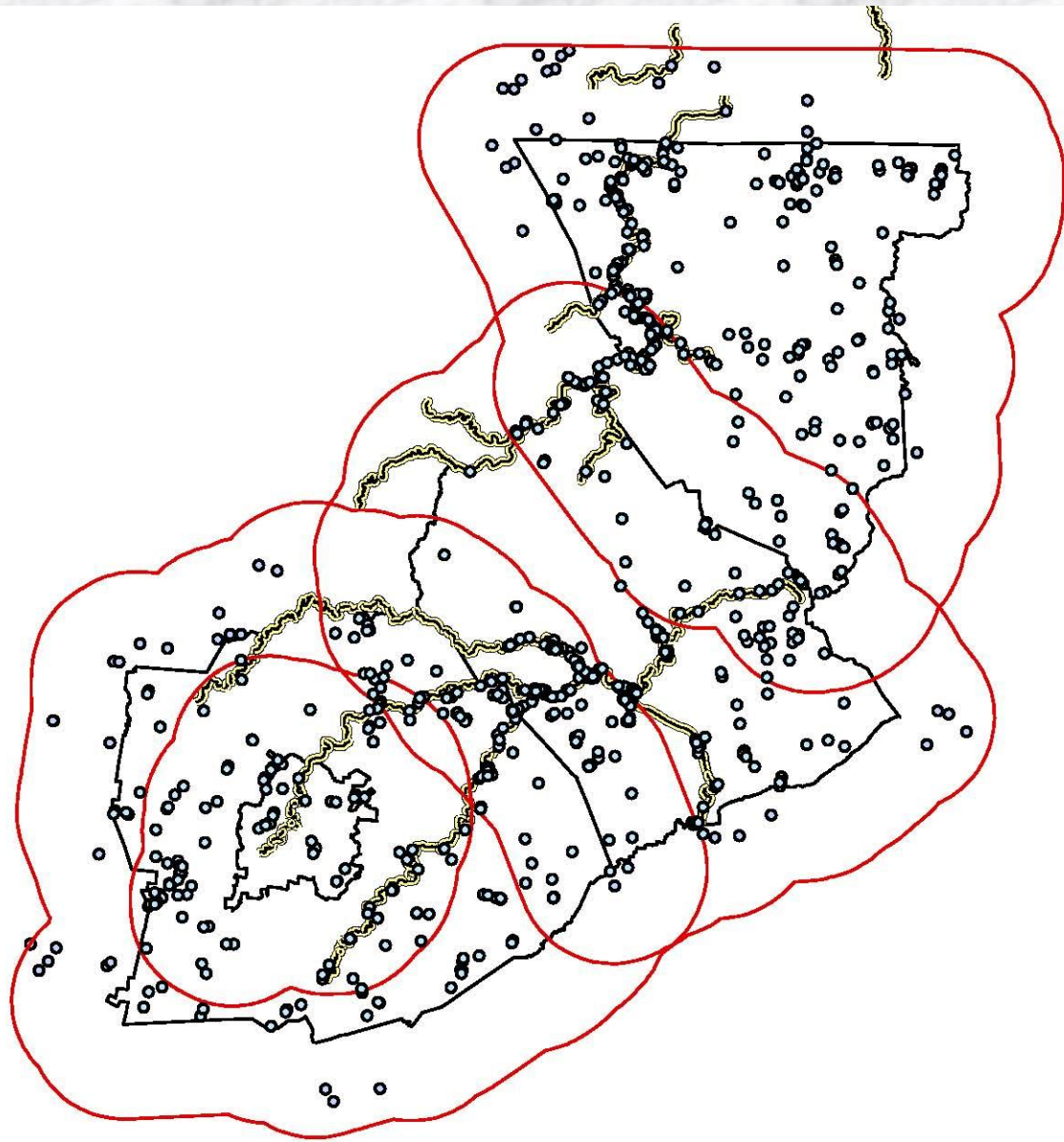
- 2km for mussels and plants
- 10km for all other species



Species List Explanations

Applicant Species Selection

1. Occurrence within jurisdiction boundary (year)
2. Critical habitat within jurisdiction boundary (CH)
3. Occurrence within buffer (X)
4. Critical habitat within buffer (CHX)



Federal

- Protected
 - Endangered
 - Threatened
 - MC = Management concern (Federal protection for birds only)
- Likely to List
 - Petitioned = Has been petitioned to be listed by USFWS and action must be taken to respond
 - WNS = Likely to be listed in future because of White-nose Syndrome (bats only)
 - Candidate = Likely to be listed as endangered or threatened in future

State

- Protected
 - DNM = Deemed in need of management
- Likely to list
 - Endemic = Currently endemic to project area or will be split into multiple species and new species will be endemic to project area

Species Common to All Applicants

Type	Species
Bird	Cerulean warbler Golden-winged warbler
Crayfish	Obed crayfish
Fish	Spotfin chub
Mammal	Allegheny woodrat Big brown bat Northern long-eared bat Rafinesque's big-eared bat Smoky shrew
Mussel	Cumberland bean
Plant	Canada lily Cumberland rosemary Cumberland sandgrass Tennessee pondweed Zigzag bladderwort
Reptile/ Amphibian	Eastern slender glass lizard Northern pinesnake Black mountain salamander Four-toed salamander Hellbender

Crossville

Type	Total (In Boundary)	Federal	Likely to List	State	Endemic
Bird	4 (2)	2	-	2	-
Crayfish	2 (1)	-	1	-	1
Fish	2 (1)	1	-	1	-
Mammal	5 (1)	-	2	3	-
Mussel	2 (0)	2	-	-	-
Plant	19 (7)	2	-	17	-
Reptile/ Amphibian	5 (2)	-	1	4	-

Crossville – Species of Note

Species	Status?	Issue
Cerulean warbler	Federal & State	<ul style="list-style-type: none">•Prefers mature forest•Last seen in buffer, not ugb
Eastern slender glass lizard	State	Last documented observation =1921
Tawny cottongrass	State	Last documented observation =1934
Bats	State (Rafinesque's)	<ul style="list-style-type: none">•No current federal status, but listing is likely

Cumberland

Type	Total (In Boundary)	Federal	Likely to List	State	Endemic
Bird	7 (4)	2	-	5	-
Crayfish	4 (2)	-	-	3	1
Fish	9 (3)	2	-	7	-
Mammal	13 (11)	2	4	7	-
Mussel	2 (2)	2	-	-	-
Plant	27 (26)	3	-	24	-
Reptile/ Amphibian	7 (6)	-	2	4	1

Cumberland Co. – Species of Note

Species	Status?	Issue
Eastern slender glass lizard	State	Last documented observation =1982
Smoky shrew	State	Last documented observation =1979
Hellbender	Federal & State	Last documented observation =1982
Tawny cottongrass, granite gooseberry, & Ladies' tresses	State	Last documented observations =1934-1949
Gray bat Indiana bat	Federal	Only federally endangered bats in the planning area

Morgan

Type	Total (In Boundary)	Federal	Likely to List	State	Endemic
Bird	7 (5)	2	-	5	-
Crayfish	3 (2)	-	-	1	2
Fish	7 (7)	1	-	6	-
Mammal	13 (11)	1	4	8	-
Mussel	8 (7)	7	1	-	-
Plant	24 (22)	3	-	21	-
Reptile/ Amphibian	7 (6)	0	1	5	1

Morgan Co. – Species of Note

Species	Status?	Issue
Least bittern, hairy-tailed mole, woodland jumping mouse, olive darter, Emory River crayfish, valley flame crayfish, Tennessee clubshell, & 10 plants	State	Documented only in Morgan Co
Emerald darter	State	Last documented observation = 1969
Sickle darter	Federal & State	<ul style="list-style-type: none">•Last documented observation = 1969•Documented only in Morgan Co
Alabama lampmussel	Federal & state	<ul style="list-style-type: none">•Last documented observation = 1974•Documented only in Morgan Co
Finerayed pigtoe	Federal & state	Last documented observation = 1919

Scott

Type	Total (In Boundary)	Federal	Likely to List	State	Endemic
Bird	6 (4)	3	-	3	-
Crayfish	3 (1)	-	-	1	2
Fish	13 (9)	4	-	9	-
Mammal	10 (1)	1	2	7	-
Mussel	10 (10)	7	2	-	1
Plant	29 (24)	3	-	26	-
Reptile/ Amphibian	6 (4)	-	-	6	-

Scott Co. – Species of Note

Species	Status?	Issue
Allegheny woodrat	State	Last documented observation =1950
Eastern slender glass lizard	State	Last documented observation =1959
Green salamander	State	Last documented observation =1953
Crystal darter	Federal & State	Last documented observation =1870
Bats	Federal & State	Documented only within Scott Co. 10km buffer
American water-pennywort	State	Last documented observation =1947

Upcoming List Refinements

Buffers

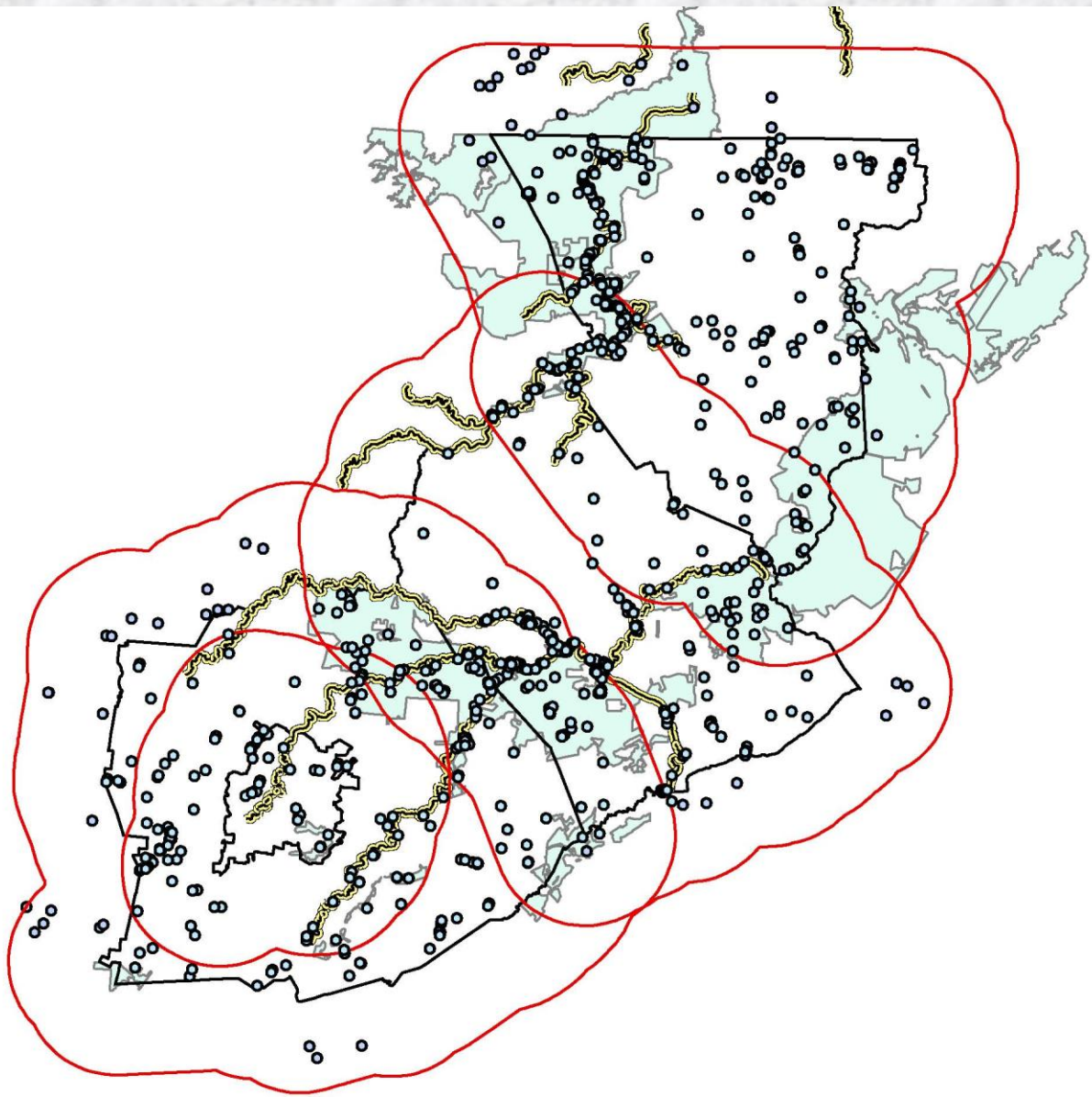
- Hydrology component of the take model will allow more accurate determination of the extent of downstream impacts.
- Will allow us to buffer based on aquatic impacts in addition to species occurrences.
- Unlikely to change upland species buffer (10km).

Occurrence Records

- Refinements
 - Species Experts Surveys
 - New cut of Natural Heritage

Species on Federal/State Lands

- Big South Fork National River and Recreational Area
- Catoosa Wildlife Management Area
- Obed W&S River
- Cumberland Mountain State Park
- Etc.



White-nose Syndrome

- WNS: highly contagious, virulent bat fungus spreading into TN
- Likely to decimate bat populations
- Question: Should HCP applicants implement conservation measures for bats if populations will decline due to WNS?
- HCP Team will work closely with USFWS to develop a recommended approach for bats

Next Steps

- Modeling for Species Habitat
- Selection of Covered Activities per Applicant
- Update list as new occurrence data is available

Closing Comments

- These lists WILL change as time goes on
- Anything that have overlooked?
- Any species you know have been issues in the past?
- Questions?