

EAHCP APPLIED RESEARCH PROJECT SCHEDULE



Year	Applied Research Program			Other Research Programs & Contracts			
	Research Categories	Research Projects	Biological Goal Reference & Rationale	Salvage Refugia	Refugia	EAA Modeling Plan	Eco Modeling
2013	1. EcoModel SAV	1. pH Drift				1. Develop FE Model	1. Develop EcoModel
		2. Low flow effects on native vegetation (NAS 49)				2. Develop ModFlow Model	
		3. Field vs. lab study					
2014	2. EcoModel FD	1. Low flow effects on FD food source (NAS 44, 45)					
	1. EcoModel FD	1. Low flow effects on FD fecundity (NAS 44)				1. Develop FE Model	1. Develop EcoModel
		2. Effects of predation on FD (NAS 44, 45)				2. Develop ModFlow Model	
2014		3. FD movement under low flow (NAS 41)					
	2. EcoModel SAV	1. Effects of vegetation decay on WQ					
	3. CSR	1. Baseline distribution (NAS 51)					
		2. Plastron functionality					
2015		3. Low flow effects on survival (NAS 54)					
	1. CSR	1. Habitat connectivity		1. Training at SMARC		1. Complete FE Model	1. Develop EcoModel
	2. EcoModel SAV	1. Algae dynamics		2. Produce F ¹ TX Blind Salamander		2. Complete ModFlow Model	
		2. Ludwigia interference (NAS 44)		3. Work w/ TXSTATE and SMARC researchers			
2016		3. Sediment (recreation/turbidity) impacts on TWR (NAS 49, 50)		4. Obtain property access for collection research			
	1. CSR	1. CSR tolerances of elevated temperature & low DO* (NAS 54)	Water quality, habitat quality	1. Collection methods/location for TX Blind Salamander		1. FE Model verification	1. Complete EcoModel
		2. Evaluate CSR life history* (NAS 51, 52, 53, 54)	Population	2. Collection methods for CSDB		2. ModFlow Model verification	2. FD Random Drop Netting (NAS 42, 44)
		3. CSR trophic level & functional feeding group categorization* (NAS 51, 55)	Population	3. Establish suitable surrogates		3. Hardy Thermal Model verification**	3. FD Mortality in Adverse Conditions (NAS 41)
2017		4. CSR quantitative sampling techniques (NAS 55) (#2 Priority)	Population				
	2. Statistical analysis of existing data	1. Scope currently being developed by SC and staff; IC consideration in Dec. 2015 (NAS Overarching Issue; #1 Priority)					
	1. SAV Restoration	1. SAV as FD habitat (shelter, prey habitat) (NAS 45, 46)	Habitat based population		Refugia research will accomplish the below deliverables for each species; moving on to the next step only when the previous has been concluded for all listed species.	1. EcoModel verification***	
2. Unfunded Projects from 2016	2. Effects of sedimentation on SAV, FD and CSR (NAS 56)	Habitat, water quality (silt free)					
3. TBD	TBD	TBD		1. Collection methods and locations			
2018					2. General husbandry (feeding, density, etc.)		
	1. Minimization & Mitigation Projects (EAHCP Ch. 5.0)	1. Evaluate success of first year of M&M projects (NAS Overarching Issue)	Each M&M project has EAHCP goals		3. Propagation techniques (egg to adult)	1. HydroModel Runs	
	2. SAV Restoration	1. Evaluate success of SAV restoration (coincides with 5 yr full SAV mapping) (NAS 44, 47, 48); species-specific, Table 4.1			4. Reintroduction/genetics	2. EcoModel Runs	
	3. Follow up research to be named as result of 2015, '16 & '17	TBD	TBD				
2019	4. TBD	TBD	TBD				
	1. Minimization & Mitigation Projects (EAHCP Ch. 5.0)	1. Evaluate success of M&M projects (NAS Overarching Issue; continuation of 2018 project)	Each M&M project has EAHCP goals			1. HydroModel Runs	
	2. Follow up research to be named as result of 2015, '16, '17, & '18	TBD	TBD			2. EcoModel Runs	
	3. TBD	TBD	TBD				

Legend/Footnotes

* RFP developed and posted for solicitation

** Use low flow data from 2013 and 2014 for verification of model (desktop exercise)

** May require contract w/ Meadows

*** Use data collected in 2016 to perform a verification analysis

NAS-recommended projects

Funding to be allocated/Research yet TBD

NAS Projects Not Recommended for Implementation

- Determine the effects from phosphorus sources, cycling, and availability on the productivity of the ecosystems (NAS 58)
- CSR population (quantitative) and distribution in Comal (NAS 55)
- CSR population (quantitative) and distribution in San Marcos (NAS 55)
- Evaluate CSR status as an indicator species (NAS 57)

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