

Biological Modeling for the Edwards Aquifer Recovery Implementation Program

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Goal

Develop a biological model through the Edwards Aquifer Recovery Implementation Program that will be used to determine take and jeopardy for Edwards species. This biological model will be compatible with the Structured Decision Making Process providing stakeholders with open and inclusive process to develop their Habitat Conservation Plan.

**EDWARDS AQUIFER MINIMUM SPRINGFLOW FOR MAINTAINING LISTED SPECIES AT
COMAL AND SAN MARCOS SPRINGS
(Minimum springflow determined by USFWS)**

SPECIES	MINIMUM FLOW (cubic feet/second)
"TAKE" LIMITS	
Comal Springs	
Fountain Darter (without snail control)	200
(with snail control)	150
San Marcos Springs	
Fountain Darter	100
San Marcos Gambusia	100
San Marcos Salamander	60
Texas Blind Salamander	50
"JEOPARDY" LIMITS	
Comal Springs	
Fountain Darter (without snail control)	150
(with snail control)	60
San Marcos Springs	
Fountain Darter	100
San Marcos Gambusia	100
Wild Rice	100
San Marcos Salamander	60
Texas Blind Salamander	50

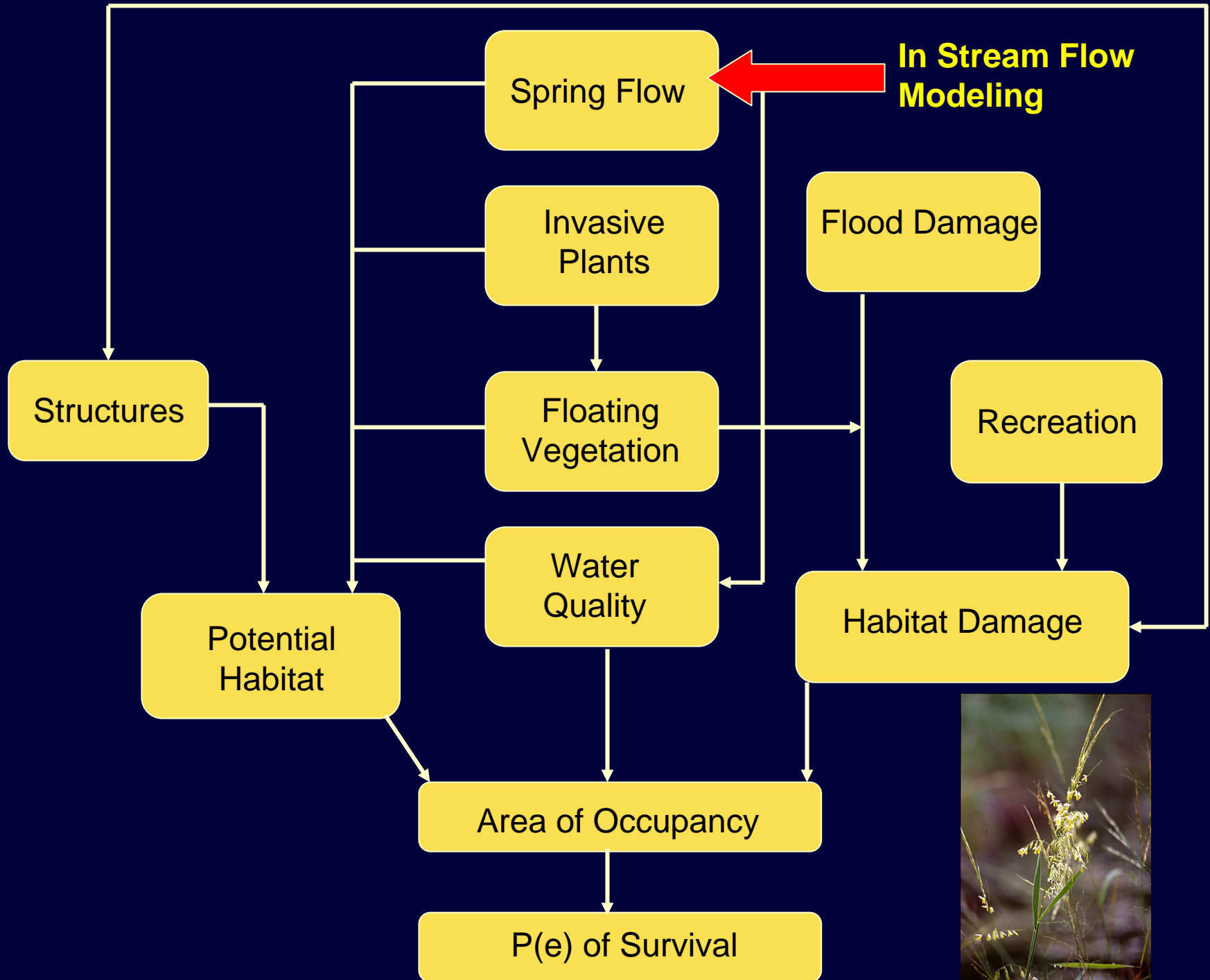
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- Prefers the SDM process to determine take and jeopardy levels through the RIP
- Do it right, so time is not wasted
- SDM provides for possible flexibility in developing management alternatives
- SDM process is compatible with the Recovery Planning process

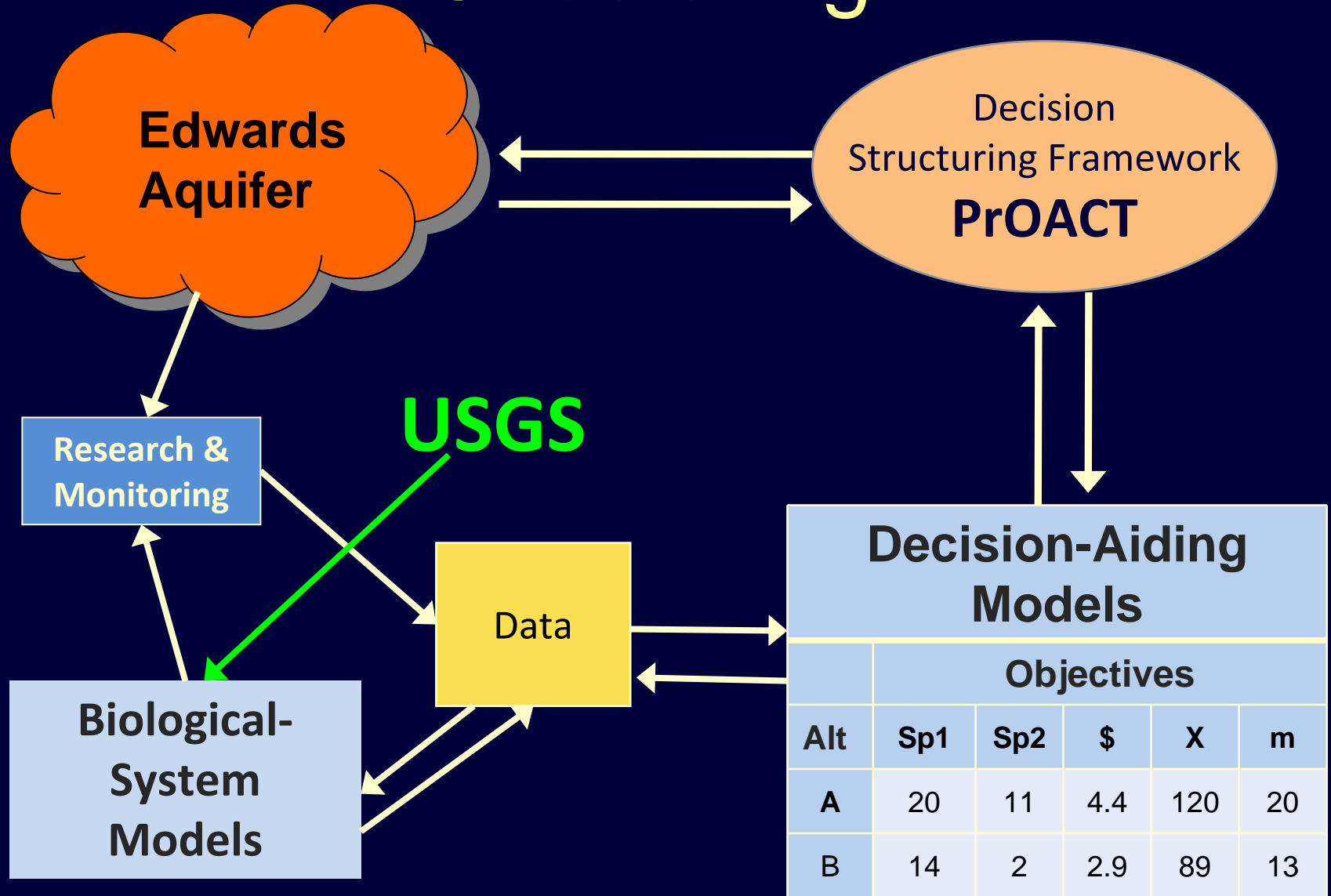
Biological Modeling - Role of USGS

USGS is uniquely qualified:

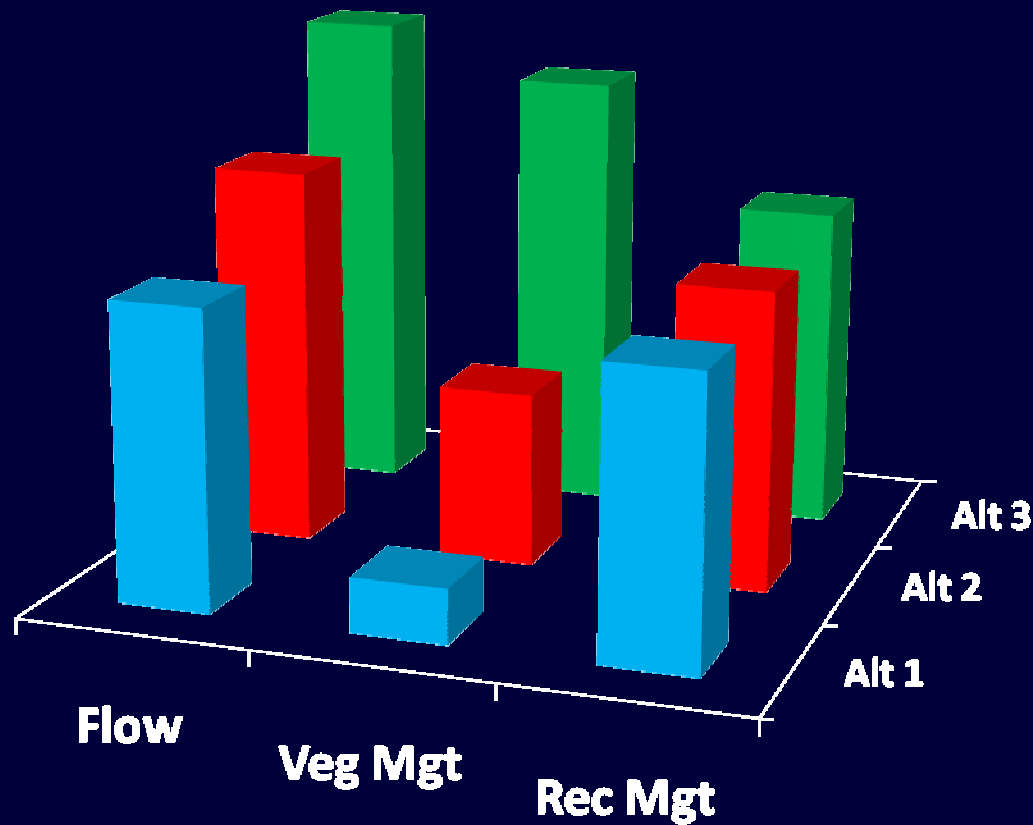
- Provide for an open and inclusive process
 - collaborative modeling that involves all stakeholders
 - transparency
- Expertise with endangered species requirements – jeopardy and recovery
- Expertise with Structured Decision Making
- Scientific Quality – Control Assurance



Edwards Aquifer RIP Structuring



Finding Factor *Combinations* Delineating RECOVERY



Blue, Red, Green
Management
Alternatives

equivalent reduction
in extinction risk

Summary

- SDM -> USGS -> provides a framework for RIP
- USGS uniquely qualified for biological modeling
- Interim flow numbers are OK for planning purposes – SB-3
- SDM / USGS biological modeling compatible with Revised Recovery Plan