Draft Agenda

Colorado/Lavaca BBEST Meeting, December 21, 2010, LCRA Shapiro Bldg, Rm 433

The primary goal of this meeting: Updates on work to be completed. Set the schedule for the final month of work.

8:30 Business/Introductions
Review agenda
Review Nov 16, 2010 consensus points and action items
Budget status
Other business

9:00 Rapid Cross-section Method and Habitat Availability
Mike Vielleux, Cross-section data
John Botros, Focal Fish species and habitat suitability
Thom Hardy, Process resulting in habitat availability/flow relations

9:45 Hydrographic separation and zero flows, Buzan
Results of biologists vs computer-generated hydrographic separation
Proposed process for sites with zero flows

10:30 Update:
HEC-RAS, Bryan and Steve
Final list of sites, Bryan
Floodplain/riparian vegetation maps, Buzan
Estuary freshwater inflow, Bryan

11:00 Report preparation, Buzan
Tasks
Sample fact sheet
Number of hard copies (25?)

Noon Lunch

12:30 Review of Basin maps –Buzan and Kathy

1:00 Substitute terms for base flow - Team

1:30 Tasks for next month
January workshop?

2:20 Public comments, confirm next meeting dates. Summarize consensus points and action items.

2:30 Adjourn

Meeting	Date	B. Cook	T. Hardy	J. Trungale	R. Hoffpauir	S. Watters	O. Thornton	M. Romigh	C. Wakefield	K. Kennedy	D. Buzan
BBEST	3/31/10		3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5
BBEST	4/20/10		6	6	6	6		6	6	6	6
Hydro	5/4/10		4	4	4	4				4	
BBEST	5/11/10		6	6	6	6		6		6	6
BBEST	6/2/10		6	6	6	6		6	6	6	6
Bay FWI	7/9/10							6	6		6
BBEST	7/21/10		6	6	6	6		6	6	6	6
	8/24/10		6	6	6			6	6	6	6
	9/21/10			6	6	6		6	6	6	6
	10/19/10		6	6	6	6			6	6	6
	11/16/10		6		6	6		6	6	6	6
	12/21/10		6	6	6	6		6	6	6	6
	1/18/10		6	6	6	6		6	6	6	6
	2/15/10		6	6	6	6		6	6	6	6
Bay FWI	8/2/10							4	4		4
Riparian	8/2/10							4	4		4
Biology	9/1/10		8	8					8		8
Riparian analysis Fall 2010								10	9		9
Water Qual	8/3/10					4					
Future cond	8/3/10			4	4					4	4
Prelim HEFR				16							
Hydro	10/8/2010			4	4					4	
workgroup			4	4	4					4	
meetings			4	4	4					4	
Hydrographic separation test			4	4							4
Report preparation			32	60	64	48		68	66	54	72
Possible Bay FWI								4	4		4
								4	4		4
Possible stakeholder support			6	6	6	6		6	6	6	6
			6	6	6	6		6	6	6	6
			6	6	6	6		6	6	6	6
			6	6	6	6		6	6	6	6
Total(hr)		1420	143.5	195.5	177.5	143.5	0	187.5	192.5	167.5	212.5

	Report hrs
Richard	64
Dave	72
Melissa	68
Cathy	66
Kirk	54
Joe	60
Steve	48
Thom	32
	464

Total labor	$213,000
Total travel exp.	$10,000
Publication costs	$10,000
Total meeting costs	$233,000
Total budgeted	**250000**
BBEST contracts and tasks remaining	**$17,000**

Yellow indicates planned meetings

28800

333.3333

Name	Annual 1 per 5 years	Annual 1 per 2 years	Annual 1 per year	Winter 1 per season	Winter 2 per season	Spring 1 per season	Spring 2 per season	Summer 1 per season	Summer 2 per season	Fall 1 per season	Fall 2 per season
Colorado Rv at Columbus	64,000	49,500	41,400	10,400	4,610	19,200	9,070	9,200	3,740	14,500	4,880
Columbus_Buzan	64,000	49,500	41,400	10,400	4,690	19,200	9,070	9,200	3,360	14,500	4,980
Columbus_Hardy	64,000	49,500	41,400	10,400	4,610	19,200	9,070	9,200	3,730	14,500	4,880

	Winter High Base	Winter Med Base	Winter Low Base	Winter Subsistence
HEFR	1,400	905	606	250
Buzan	1,420	907	606	250
Hardy	1,390	900	606	250

	Spring High Base	Spring Med Base	Spring Low Base	Spring Subsistence
HEFR	2,100	1,500	966	361
Buzan	1,980	1,430	938	361
Hardy	2,050	1,480	957	361

	Summer High Base	Summer Med Base	Summer Low Base	Summer Subsistence
HEFR	2,150	1,800	1,400	535
Buzan	2,160	1,800	1,410	535
Hardy	2,140	1,800	1,400	535

	Fall High Base	Fall Med Base	Fall Low Base	Fall Subsistence
HEFR	1,510	1,100	707	285
Buzan	1,600	1,140	722	285
Hardy	1,530	1,120	710	285

	Buzan	Hardy	Total records
Pulse to base changes	1258	180	33968
Base to pulse changes	911	248	33968

Concho at Paint Rock

Days in periods of no flow that started in each month

Jan	7	42																			
Feb	1																				
Mar	39	5	4	1	4	1	3														
Apr	11	3	2	1	19	23	1	12	33	1	8	55	2								
May	3	2	68	7	8	7	9	38	8												
Jun	4	1	5	37	78	48	16	14	72	4	15										
July	59	44	18	21	4	1	45	52	18	26	63	15	6	26	37	316	90	4	66	18	39	4
Aug	57	27	22	11	5	8	5	13	8	20	279	19	21	18	9	26	51	3				
Sep	13	5	9	4	22	1	154	3	15	6											
Oct	10	5	15	9	6	44	86	1													
Nov	24	16																			
Dec																					

0.081	Proportion of total POR days with zero flow
93	Total years POR
46	Total years with zero flows
0.495	Proportion of 93 years with zero flows
113	Number of no flow periods
24.47	Ave number of no flow days in periods with no flow
0.165	Proportion of days with zero flows in years with zero flows
60.11	Ave number of days with zero flow in years with zero flows

Pecan Bayou

Days in periods of no flow that started in each month

	Jan				
304 days of zero flow	Feb				
15342 days above zero flow	Mar				
0.01981 proportion of days wit	Apr				
10 periods of zero flow	May	69			
mean period was 30 days	Jun	38			
median period was 31 days	Jul	27	41	19	36
	Aug	6	4	54	
	Sep				
	Oct	9			
	Nov				
	Dec				

Colorado at Ballinger

Days in periods of no flow that started in each month

Jan	6	5	1	1												
Feb	2	7	23	86	28	44	36									
Mar	1	55	18	5	16	5	7	13	2	3	13					
Apr	11	8	6	16	14	12	12	5	4	2	15	3				
May	6	9	1	6	8	12										
Jun	4	4	83	43	11	3	11	3	7	65	2	1				
Jul	12	56	15	14	33	7	2	50	37	1	9	3	27	44	30	20
Aug	9	12	2	1	107	15	13	2	17	21	4	19	1	14	3	5
Sep	9	3	69	13	30	21	31	3								
Oct	1	7	7	3	39											
Nov	70															
Dec	2	4														

0.0478 proportion of total days without flow Jan 1 1908 through Apr 2009
37 of 101 yrs had days with zero flow
13505 total days in the 37 years with periods of zero flow
0.130989 proportion of total days without flow during the 37 yrs with periods of no flow
2.864865 number of zero flow periods per year during the 37 yrs with periods of no flow
47.78378 average number of zero flow days during the 37 yrs with periods of no flow
1 shortest period of no flow
107 longest period of no flow

Elm Creek at Ballinger

0.36404039 proportion of days in period of record with zero flow daily ave flow
54 of 66 yrs number of years with some zero daily ave flow days
0.519482496 proportion of days in all years with some zero flow daily ave flows
0.561643836 proportion of days with zero daily ave flow in 1933
0.846575342 proportion of days with zero daily ave flow in 1934
0.356164384 proportion of days with zero daily ave flow in 1935
0.893150685 proportion of days with zero daily ave flow in 1950

zero flow daily ave flows occurred on every day of the calendar year at least once during the period of record

Section	Team member	Hours
· **Environmental Flow Regimes for Streams**		
· **Environmental Flow Regimes for Bays**		
1.1. Basin & Bay Expert Science Team – one page list of BBEST members and their affiliations	Richard	
1.2. Sound Environment – one page description of BBEST's approach to defining sound environment	Richard	4
2. Fact Sheets: Rivers and Bays		
2.1. Upper Colorado River	Dave	12
2.1.1. Colorado River at Silver		
2.1.2. Colorado River at Ballinger		
2.1.3. Colorado River at San Saba		
2.2. Tributaries to Colorado River		
2.2.1. Elm Creek	Dave	4
2.2.2. Concho River	Dave	4
2.2.3. South Concho River	Dave	4
2.2.4. Pecan Bayou	Dave	4
2.2.5. San Saba River	Dave	4
2.2.6. Llano River	Melissa	4
2.2.7. Pedernales River	Melissa	4
2.2.8. Onion Creek	Melissa	4
2.3. Lower Colorado River		
2.3.1. Colorado River at Austin	Melissa	4
2.3.2. Colorado River at Bastrop	Melissa	4
2.3.3. Colorado River at Columbus	Melissa	4
2.3.4. Colorado River at Wharton	Melissa	4
2.3.5. Colorado River at Bay City	Cathy	4
2.4. Lavaca-Navidad River Basin	Cathy	24
2.4.1. Lavaca River		
2.4.2. Navidad River at Edna		
2.4.3. Navidad River at Ganado		
2.4.4. Sandy Creek		
2.4.5. East Mustang Creek		
2.4.6. West Mustang Creek		
2.5. Coastal Streams	Cathy	8
2.5.1. Garcitas Creek		
2.5.2. Tres Palacios Creek		
2.6. East Matagorda Bay	Melissa	6
2.7. Matagorda Bay	Bryan	
2.8. Lavaca Bay	Cathy	6
3. Instream Flow Analyses Methods		
3.1. Geographic Scope	Kirk	4
3.1.1. Streamflow Gaging Stations	Joe	4
3.1.2. Selection of Flow Regime Recommendation Locations	Richard	8
3.2. Hydrology-based Environmental Flow Regimes		
3.2.1. Season Selection	Kirk	4
3.2.2. Flow Regime Components	Richard	16
3.2.2.1. Subsistence		
3.2.2.2. Base		
3.2.2.3. Pulses		
3.2.2.4. Overbank		
3.2.3. Hydrographic Separation	Joe	8
3.2.4. Period of Record	Kirk	8
3.2.5. HEFR Applications	Joe	8
3.3. Biology		
3.3.1. Description of methodology/assumptions	Thom	24
3.3.1.1. Aquatic Species		
3.3.1.1.1. Habitat Guilds		
3.3.1.1.2. Focal Species		
3.3.1.1.3. Other Important Species	Okla	
3.3.1.1.4. Habitat Availability/Suitability Analyses		
3.3.1.2. Riparian Species	Melissa	20
3.4. Water Quality		
3.4.1. Description of methodology/assumptions	Steve	24
3.4.2. Available Sampling Data	Okla	
3.4.3. Available Modeling Results	Bryan	
3.5. Geomorphology	Steve	16
3.5.1. Description of methodology/assumptions	Nolan	
3.5.2. Modeling Results	Nolan	
3.6. Definition of Sound Environment		
4. Instream Flow Regime Recommendations		
4.1. Comparison(s) to Instream Flows in WAMS	Kirk	30
5. Freshwater Inflow Analyses Methods		
5.1. East Matagorda Bay: Methodology/assumptions	Melissa	6
5.2. Matagorda Bay: Methodology/assumptions	Bryan	
5.3. Lavaca Bay: Methodology/assumptions	Bryan	
5.4. Comparison to State Methodology Recommendations	Bryan	
6. Integration of Instream Flow and Freshwater Inflow Regimes		
6.1.1. Comparison of Stream to Bay Flow Regime Recommendations	Joe	8
6.1.2. Nutrient Considerations	Dave	4
6.1.3. Sediment Considerations	Dave	4
7. Adaptive Management/Work Plan	Cathy	16
7.1. Research Priorities		
7.2. Data Collection & Monitoring		
8. References	Richard	4
Document consistency with SAC guidance and SB3 legislation	Joe	24
Document management:	Richard	24
Document management	Dave	24
Total hours to prepare document		400
Document review and edit: 8 hrs each for Steve, Thom, Joe, Kirk, Cathy, Richard, Joe and Dave		64
	Total cost	69600

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