

Agenda

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Rosemont Copper Project

Cooperating Agency Discussion of Riparian Mapping and Functional Assessments

Thursday, June 28, 2012

Basement Conference Room A, Federal Building, 300 W. Congress, Tucson

Conference phone line: 888-858-2144, passcode 9306463#

Purpose of Meeting:

In response to public comments received on the Rosemont DEIS, the Forest is considering revising the methods used to analyze potential impacts to riparian vegetation due to changes in surface water or groundwater associated with mine activities. The Forest is inviting cooperating agencies with jurisdiction, special expertise, or interest in this topic to participate in a working session to evaluate possible approaches. The intended outcome of the meeting is to inform the Forest Supervisor of 1) riparian mapping data sources, and 2) functional assessment techniques, so Jim can make NEPA analysis decisions going forward.

Time	What	Who
09:00	Introductions, Ground Rules, Housekeeping	Melissa Polm
09:30	Overview of Riparian Mapping Sources	Chris Garrett; DeAnne Rietz
10:00	Discussion of Riparian Mapping Source Pros/Cons	Open
12:00	Lunch on your own	
13:00	Overview of conceptual "Functional Assessment" approach, and sideboards for discussion	Chris Garrett
13:30	Discussion of Cooperating Agency Assessment Techniques	Open
16:00	Adjourn	

Cooperating Agency Discussion of Riparian
Mapping and Functional Assessments
June 28, 2012

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Pima County Regulated Riparian Habitat Coverage

Habitat Class	Definition
Important Riparian Areas (IRA)	Occur along major river and wash systems <ul style="list-style-type: none"> • Higher water availability • Higher vegetation density • Higher biological productivity
Hydroriparian / Mesoriparian Habitat (H)	Hydro- associated with perennial watercourses and/or springs Meso- associated with intermittent watercourses and/or shallow groundwater
Xeroriparian :	Associated with ephemeral water supply
(A)	most dense vegetation volume (> 0.856 M ³ /M ²)
(B)	moderately dense vegetation volume (0.675 to 0.856 M ³ /M ²)
(C)	less dense vegetation volume (0.500 to 0.675 M ³ /M ²)
(D)	less to sparse plant density (≤ 0.500 M ³ /M ²)

Source: <http://rfcd.pima.gov/wrd/riparian/guidelines/pdfs/onsite-guidelines.pdf> accessed June 26 2012
M³/M² = cubic meters per square meter

US Forest Service Vegetation Coverage

Riparian Vegetation Class	Geographic Extent
Deciduous Riparian	<ul style="list-style-type: none"> • Scholefield Canyon on mine site • Sycamore Canyon north of mine site • Box Canyon west of mine site
Dry Desert Riparian	<ul style="list-style-type: none"> • Barrel Canyon on mine site • Gardner Canyon south of mine site
Coniferous Riparian	<ul style="list-style-type: none"> • Sawmill Canyon southwest of mine site

WestLand Field Riparian Data Coverage

Riparian Class	Description
I	Less dense vegetation (NDVI 89-104)
II	
III	
IV	
V	More dense vegetation (NVI 136-168)

Source: WestLand Resources, Inc. 2010. Onsite Riparian Habitat Assessment Rosemont.
NDVI = Normalized Vegetation Density Index

3. RESULTS AND DISCUSSION

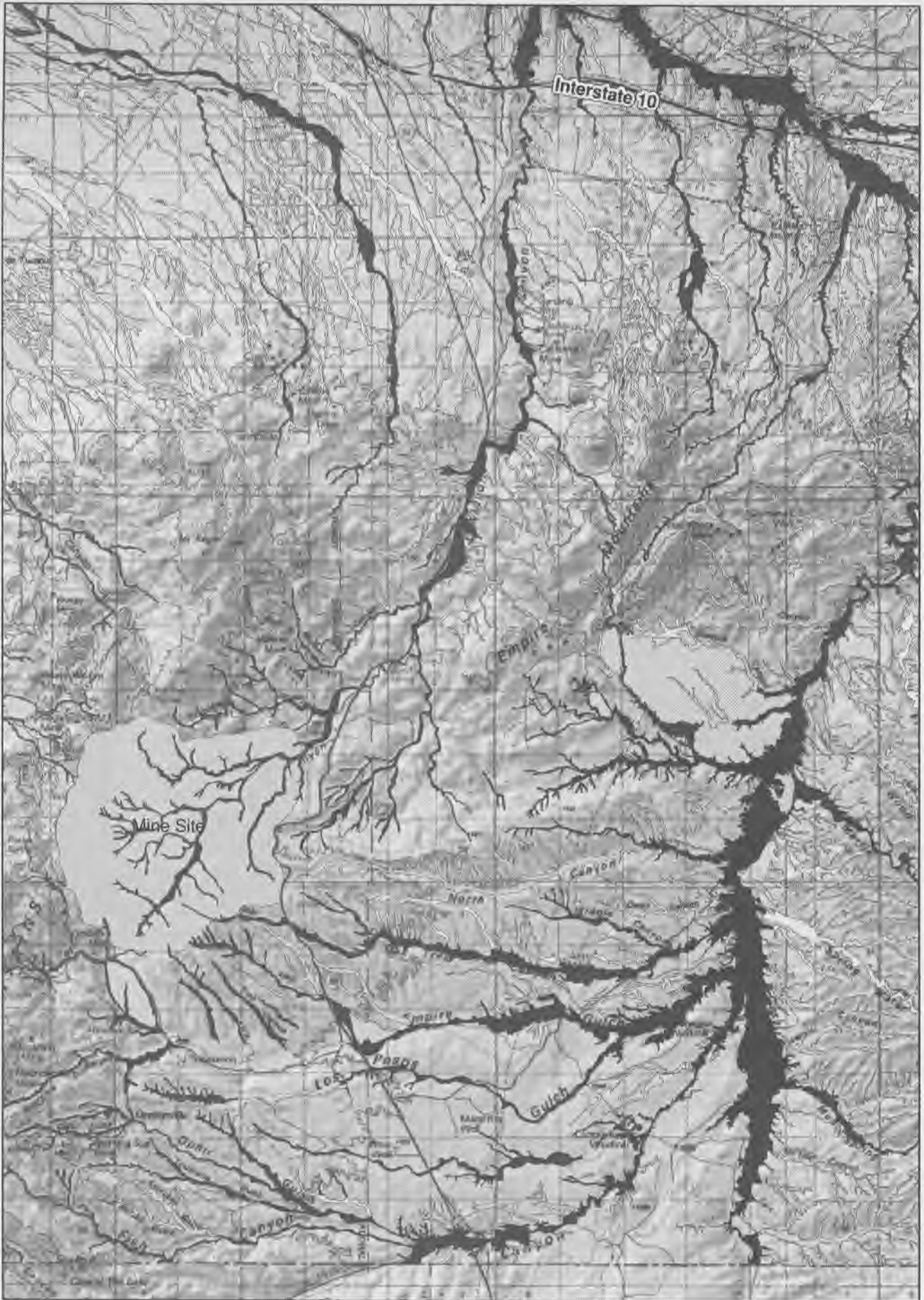
3.1. FIELD EVALUATION RESULTS

At 43 of 46 points within the designated IRA, we estimated the width of the riparian habitat along the main stem and tributaries of Barrel and Scholefield Canyons.⁸ Overall, the actual riparian habitat widths averaged 36.9 percent \pm 6.8 percent of those plotted by Pima County. Of the 43 riparian area widths measured, 37 (86 percent) were narrower, while 6 (14 percent) were wider than those delineated by Pima County (Table 3). Our field measured riparian habitat widths ranged from 8 ft to 551 ft, compared to Pima County's mapped widths that ranged from 89 ft to 611 ft at the same locations. Using the County mapped riparian boundaries for impact assessment would over estimate impacts to riparian resources.

Table 3. Field measured width of riparian habitats and reported width of Pima County designated Important Riparian Areas (IRAs) measured within the Study Area and the Rosemont Holdings. Sample point locations are depicted on Figure 3

Sample Pt	Measured Riparian Width (ft)	Pima County IRA width (ft)	Width Diff (ft)	Sample Pt	Measured Riparian Width (ft)	Pima County IRA width (ft)	Width Diff (ft)
7	93.9	212.6	-118.7	32	21.6	153.3	-131.6
8	94.9	174.3	-79.4	33	109.0	152.8	-43.8
9	107.5	610.6	-503.1	34	345.1	335.4	9.7
10	17.0	199.1	-182.0	35	550.9	409.6	141.3
11	35.2	168.2	-133.0	36	12.5	88.7	-76.3
13	199.8	139.5	60.3	37	9.9	173.8	-163.9
14	22.3	138.6	-116.2	38	284.3	226.7	57.5
15	22.4	133.1	-110.7	39	63.8	177.2	-113.4
16	15.4	152.2	-136.8	40	375.3	375.0	0.3
17	10.0	127.6	-117.7	41	87.2	122.3	-35.1
19	11.0	196.9	-185.9	44	7.7	296.4	-288.7
20	69.8	165.6	-95.8	45	31.8	187.4	-155.6
22	31.0	181.2	-150.3	46	14.4	207.9	-193.5
23	9.5	257.1	-247.6	47	26.9	215.9	-188.9
24	26.1	106.9	-80.7	48	13.1	164.5	-151.4
25	10.2	134.5	-124.3	50	15.3	263.8	-248.5
26	21.0	339.9	-318.9	52	34.5	211.4	-176.9
27	140.0	263.6	-123.6	53	283.7	516.4	-232.7
28	19.2	362.8	-343.6	54	335.2	188.8	146.5
29	12.5	168.9	-156.5	60	27.3	263.0	-235.7
30	164.4	411.0	-246.6	61	31.9	180.5	-148.6
31	15.2	147.4	-132.2				

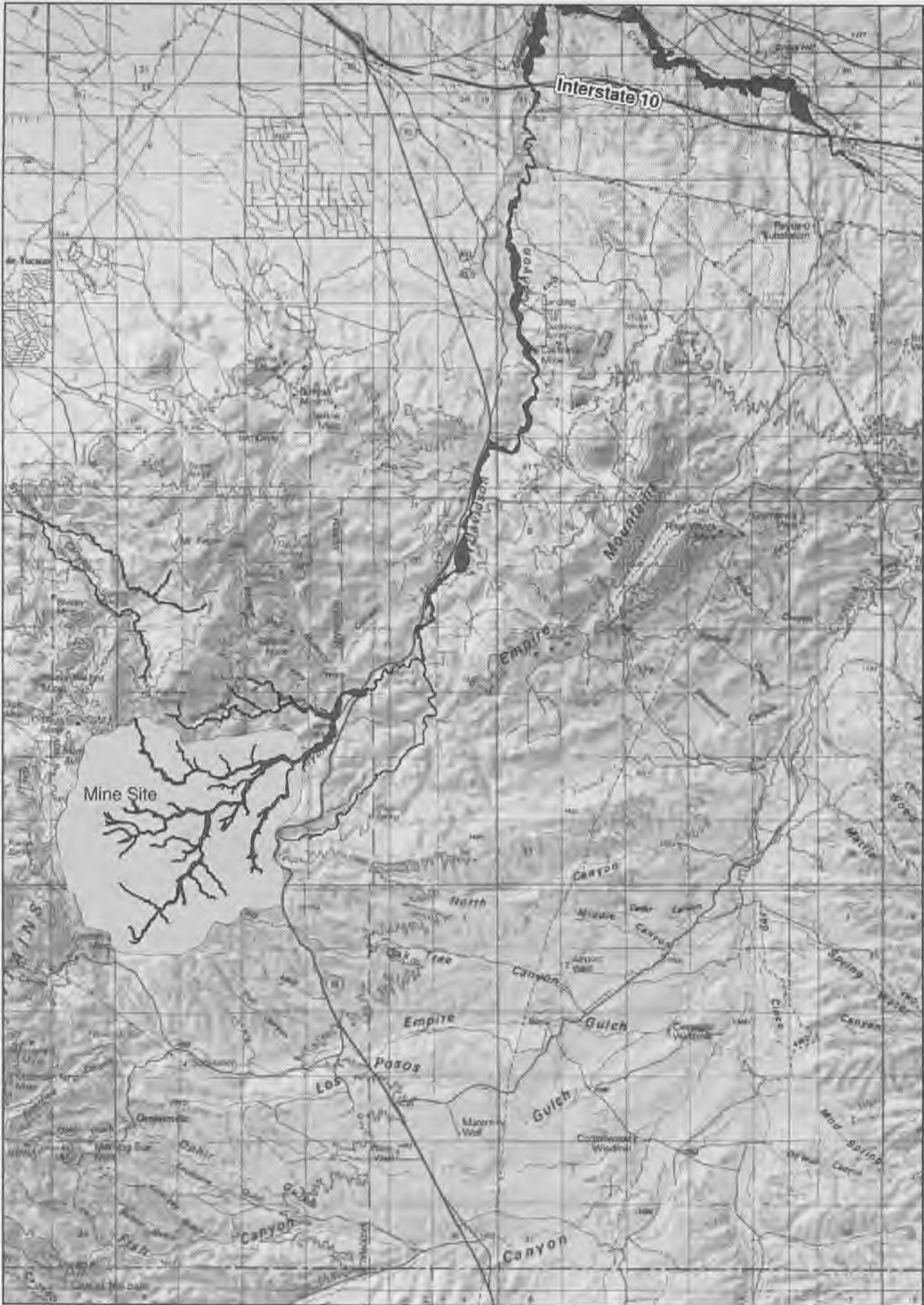
⁸ Missing data prevented estimates of riparian habitat width at three of the points.



Pima County Regulated Riparian Habitat Coverage

Pima County Riparian Class on mine site (rip05fc2)

CLASS	OWNERSHIP
IRA	FEDERAL RIP
IRA	FEDERAL RIP
IRA	FEDERAL RIP
IRA	FEDERAL RIP
IRA	FEDERAL RIP
IRA	FEDERAL RIP



Westland Field Riparian Data Coverage

Westland Onsite_Riparian classes

Class MergeRip_D

2

Barrel
Barrel
Barrel
Barrel
Barrel
Wasp
Barrel
Barrel
Barrel
Barrel

3

Barrel
Barrel
Barrel
Barrel
Barrel
Barrel
Barrel
Barrel
Barrel
Wasp
Wasp
Wasp
Wasp
Wasp
Wasp
Barrel
Barrel
Barrel
McCleary
McCleary
McCleary
McCleary
McCleary
McCleary

4

Barrel

Class MergeRip_D

Barrel
Barrel
Barrel
Barrel
Wasp
Wasp
Wasp
Wasp
Barrel
Barrel
Barrel
McCleary
McCleary
McCleary
Barrel
Barrel
Barrel
McCleary
McCleary

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