



# Western Riverside County Regional Conservation Authority

## GIS Methodology, Process, and Procedures

**October 4, 2006**

### **Annual Report 2005.**

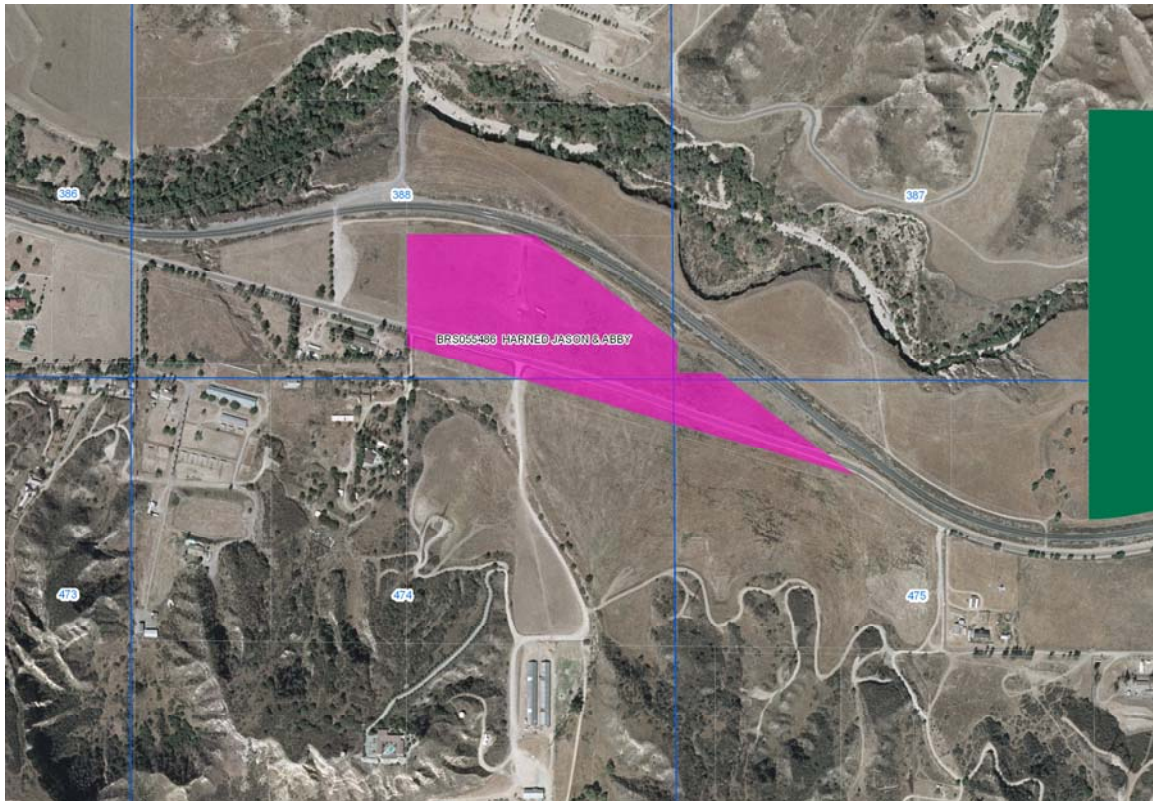
The process and procedure of compiling the development permit activities from the County and Cities by the RCA was refined for this reporting period based on the RCA's experience in developing the first annual report. The Cities and County were contacted in January of 2006 and were asked to start preparing the permit and development information for the RCA. The RCA then acquired from the County and the Cities the building and grading permits and projects data for the period of 1/1/2005 through 12/31/2005.

The RCA focused its efforts on compiling grading permits (rough and precise), building permits for single family homes on an existing lot, single family homes in tracts, multiple family dwellings such as apartments and condos, mobile homes in single lots and commercial and industrial buildings as the appropriate categories for the reporting process. These permits and projects were acquired from the Cities and County in either a electronic format (GIS ESRI Shape files or Excel Spreadsheets) or in some cases paper based report listings from some of the smaller cities. The permit or project data was either linked, geo-coded, or manually identified to a parcel location on a GIS shape file to represent the area developed and shown as a loss for that permittee during the reporting period. The Cities and County would issue over the year batches of permits for larger developers of subdivisions. Due to building, financing, and phasing requirements the builders will usually pull between ten and sixteen SFR permits in a tract at a time. This results in many permits being pulled over the year and for these projects the boundary of the subdivision was established in the reporting file as one project polygon. The date and permit number of the first building permit was indicated with a note within the project on how many other permits were pulled by the developer.

In compiling the data for the first RCA Annual Report for 2004 it was noted that the Cities and County all had a common practice as part of the development process of issuing multiple permits on a parcel or project. For example it was noted that on a commercial development it may have 5 or 6 commercial building permits, 3 or 4 precise grading permits and one rough grade permit (BGR) issued on either a portion or all of the parcel. Another component of the development process that continues to complicate the reporting process is the length of time for the processing and ultimate build out of the development that will occur over many years. Finally the requirement to identify losses and gains with criteria cells adds to the number of projects or permit records. The

following example presents a single building permit that ends up creating four separate records for each criteria cell.

### **Exhibit 1 – Single Building Permit**



The RCA also noted in the process of compiling the permit data that some Single Family Homes had building permits issued that were not parts of an active subdivision. These infill projects had lots created as early as 1968. For example: Two permits were issued in a cell within the City of Canyon Lake. The subdivision was Tract 3831, Recorded as MB 60 pgs 38 to 50 on 11/01/1968. Other examples of lots created even earlier than those dates could be found in the core areas of some of the cities. This infill of areas that would never be considered for conservation will continue to impact the information presented in the RCA Annual Report for many years. Finally the RCA staff and permittee staff are spending considerable amounts of time in compiling and reviewing permits and projects outside of the MSHCP Criteria Areas. These permits and projects total to 80.74% of the total area for permits and projects since the MSHCP permit was issued. The need to account for permits and projects that do not affect the Rough Step Calculations highly complicates the process and delays the completion of the Annual Report by months.

### **Reporting Procedures**

In preparing the 2005 Annual Report the RCA built on its experience in preparing the 2004 Annual Report. New procedures have been adopted to compile and acquire the development and permit information from the Cities and County. New for the 2005

Annual Report are two procedures or processes to correct problems discovered in the reporting of data from a previous year and to correctly report on losses due to development.

The first process reflects the data correction process that would affect the area or acres that have been reported in a previous year. The RCA has found that in reporting on a grading permit or projects that the permit is be tied to the Assessors Parcel Number or Address. When linked to the GIS this then indicates that the entire parcel was a loss. We have developed a documentation process that when additional information is received at a later date that only a portion of the parcel was graded or disturbed there is a process to correct the reporting data. This provides the ability and procedure to alter the polygon that represented a loss in a previous reporting period.

#### **Procedures for 2005 and Future Years**

GIS shape files will be kept separate for gains and losses for each reporting year.

WRC_PQP_Conserved_Lands	(Public Quasi Public Lands from MSHCP)
WRC_Acquisitions_Gains_Prior_06222004	(Acquisitions and Gains after 2000 through MSHCP permit issuance on 6/22/2004)
WRC_Acquisitions_Gains_2004	(All acquisitions from 6/22 to 12/31/2004)
WRC_Acquisitions_Gains_2005	(All acquisitions/conservation from 2005)
WRC_RCA_AR_Acquisitions_Gains.shp	(All acquisitions and gains to 12/31/2005)
WRC_Project_Losses_2004	(all permits/projects from 2004)
WRC_Project_Losses_Corrected_2004	(all permits/projects from 2004 as corrected)
WRC_Project_Losses_Reported_2005	(All permits/projects from 2005)
WRC_Project_Losses_2005	(permits/projects to report for 2005 on areas not previously reported)
WRC_RCA_AR_Project_Losses.shp	(All permits/projects losses to 12/31/2005)

#### **Losses Correction File.**

The original WRC\_Project\_Losses\_2004.shp file was used to create the file for the corrected loss file. The file WRC\_Project\_Losses\_Corrected\_2004.shp will have all edits and changes so that the original file as reported remains unchanged. .

Changes to records in the Losses file are noted within the metadata for the shape file with a attached word document "WRC\_Project\_Losses\_Corrected\_2004.doc". Changes to records as also noted in the field (Notes) when appropriate. The first project/permit was modified based on the conservation easements that were received by the RCA and the polygon was corrected. It is important to review all small slivers since projects or permits can slightly overlap cells.

In general any corrections to the WRC Project Losses files must be memorialized within the appropriate metadata and referenced in the Word document that is attached as a reference document. This document must include what information or reference was

used to address and correct polygons that were previously listed as a loss but ended up not being a total loss due to either a re-evaluation of data, recordation of a conservation easement or some other action that allows the RCA to restate the loss.

### **WRC\_Project\_Losses\_Reported\_2005.shp**

All permits and projects from the Permittees for 2005 were geocoded into a shape file to represent those projects that had permits issued and reported on during 2005.

#### **WRC\_Project\_Losses\_Reported\_2005.shp**

<b>Name</b>	<b>Records</b>	<b>Total Acres</b>	<b>Acres in Cells</b>	<b>Acres Outside of Cells</b>
Banning	96	156.899	0.000	156.899
Beaumont	402	929.878	65.241	864.637
Calimesa	126	431.551	93.714	337.837
Canyon Lake	61	30.467	0.346	30.122
Corona	67	189.232	6.576	182.656
County	4324	16420.416	2888.164	13532.252
Hemet	81	1325.258	40.231	1285.027
Lake Elsinore	235	1633.400	855.501	777.900
Moreno Valley	130	1139.009	0.000	1139.009
Murrieta	732	1190.065	559.640	630.425
Norco	108	79.618	0.000	79.618
Perris	159	950.251	69.623	880.628
Riverside	317	935.499	10.906	924.593
San Jacinto	87	611.576	9.139	602.437
Temecula	674	701.182	151.263	549.919
	7599	26724.300	4750.343	21973.957

This year required a new process to account for permits and projects that were reported in a previous year to avoid the double counting projects as losses. To create the final version of the project loss file that will be used for the Habitrak Reports and Rough Step the WRC\_Project\_Losses\_Corrected\_2004.shp was used to erase any projects or permits polygons in WRC\_Project\_Losses\_Reported\_2005.shp that had already been reported on in 2005 to create the file WRC\_Project\_Losses\_2005.shp.

### **WRC\_Project\_Losses\_2005.shp**

This resulted in a file containing 5671 projects and permits to report as new losses. The reduction of 1928 projects and permits were those that had been previously reported as a loss in 2004.

#### **WRC\_Project\_Losses\_2005.shp**

<b>Name</b>	<b>Records</b>	<b>Total Acres</b>	<b>Acres in Cells</b>	<b>Acres Outside of Cells</b>
Banning	94	149.142	0.000	149.142
Beaumont	67	465.870	0.000	465.870
Calimesa	121	423.342	93.604	329.738
Canyon Lake	61	30.467	0.346	30.122
Corona	57	78.399	6.576	71.823

County	3532	11887.148	2344.521	9542.627
Hemet	73	969.808	0.000	969.808
Lake Elsinore	138	1047.353	519.018	528.335
Moreno Valley	121	907.434	0.000	907.434
Murrieta	322	766.668	336.951	429.717
Norco	19	20.287	0.000	20.287
Perris	132	590.964	0.000	590.964
Riverside	303	847.534	10.906	836.628
San Jacinto	82	330.103	9.139	320.964
Temecula	549	570.129	151.263	418.867
	5671	19084.648	3472.322	15612.327

#### **WRC\_RCA\_AR\_Project\_Losses.shp file.**

The WRC\_RCA\_AR\_Project\_Losses.shp shape file was assembled from the WRC\_Project\_Losses\_Corrected\_2004.shp and WRC\_Project\_Losses\_2005.shp files. It has a field "Year" that contains the value of the year reported from each of the files. Current valid field names are 2004, and 2005.

WRC\_RCA\_AR\_Project\_Losses.shp

8458 Records	Total Acres	36,371.596 acres
	Acres in Cells	7,003.659 acres
	Acres outside of Cells	29,367.938 acres

#### **WRC\_RCA\_AR\_Acquisitions\_Gains.shp file.**

The WRC\_RCA\_AR\_Acquisitions\_Gains.shp shape file was assembled from the WRC\_Acquisitions\_Gains\_Prior\_06222004, WRC\_Acquisitions\_Gains\_2004, and WRC\_Acquisitions\_Gains\_2005. It has a field "Year" that contains the value of the year reported from each of the files. Current valid field names are Prior2Plan, 2004, and 2005. Each year a WRC\_Acquisitions\_Gains\_XXXX file will be created and then appended to this cumulative gains file.

WRC\_RCA\_AR\_Acquisitions\_Gains.shp (385 Records)

Containing 25,922.374 acres of conservation

## **GIS Analysis Methodology**

### **Rough Step Formula Calculations Data Files**

To generate the rough step calculations for losses and gains on the MSHCP a series of eight ESRI shape files are required.

WRC\_MSHCP\_Criteria\_Cells.shp = TLMA.CriteriaCells (SDE Layer)  
(Criteria Cells as established by MSHCP)

WRC\_RCA\_AR\_Acquisitions\_Gains.shp  
(Acquisitions/Gains from 2000 to 12/31/2005)

WRC\_RCA\_AR\_Project\_Losses.shp  
(Project and Permits losses 6/22/2004 to 12/31/2005)

WRC\_MSHCP\_Veg polygon coverage

Vegetation coverage used by MSHCP

TLMA.RoughStepUnits (SDE Layer)

Rough Step Areas as established by MSHCP

TLMA.AREAPLAN\_BDY (SDE Layer)

Area Plan Boundaries as established by MSHCP

TLMA.AreaPlan\_Subunits (SDE Layer)

Area Plan Sub-Unit Boundaries as established by MSHCP

TLMA.CITIES (SDE Layer)

City Boundaries as maintained by County GIS

Since the rough step formulas are based on cumulative numbers for both gains and losses it is necessary to generate statistics for all rough step areas, area plans, area plan subunits and jurisdictions.

## GIS Shape Files – Gains

WRC\_Acquisitions\_Gains\_Prior\_06222004.shp

299 Records

Total Acres

20,440.189 acres

WRC\_Acquisitions\_Gains\_2004.shp

39 Records

Total Acres

1,369.998 acres

WRC\_Acquisitions\_Gains\_2005.shp

47 Records

Total Acres

4,112.188 acres

WRC\_RCA\_AR\_Acquisitions\_Gains.shp

385 Records

Total Acres

25,922.374 acres

## Gains General Data and Numbers

The WRC\_RCA\_AR\_Acquisitions\_Gains.shp file (25,922.37 acres – 385 records) was unioned with the Rough Step Boundaries to create AR\_Acq\_RS.shp. All records that did not have a “Gains” component were dropped from the file leaving 389 records. Several fields not needed were then dropped from the file. Area and acres were then recalculated and double checked as 25,922.37 acres for the 389 records.

Then the AR\_Acq\_RS.shp was unioned with the vegetation wrc\_mshcp\_veg polygon to create a new shape file AR\_Acq\_RS\_Veg.shp with a total of 18550 records. Those records not representing a project with vegetation categories were then removed from the file leaving 1462 records. It was noticed that three acquisitions had a small area outside of the boundary of the veg file and those records were corrected to reflect the appropriate veg classifications. Fields and attributes not needed for reporting were removed. Acreage was recalculated to reflect veg classifications and double checked as 25922.37 acres for the 1462 records in the file.

### **Rough Step – Vegetation Gains**

The AR\_Acq\_RS\_Veg.shp file was then broken up into separate Rough Step reporting files. For each StepNum (1 through 8) the appropriate records for the rough step were selected and then saved to a separate file (AR\_Acq\_RS\_Veg\_X.shp (X=1 to 8 ).

AR_ACQ_RS_VEG_1	8 records	181.463 acres
AR_ACQ_RS_VEG_2	601 records	12834.809 acres
AR_ACQ_RS_VEG_3	57 records	1862.840 acres
AR_ACQ_RS_VEG_4	152 records	4552.161 acres
AR_ACQ_RS_VEG_5	5 records	91.338 acres
AR_ACQ_RS_VEG_6	299 records	3120.353 acres
AR_ACQ_RS_VEG_7	241 records	1364.108 acres
AR_ACQ_RS_VEG_8	99 records	1915.403 acres

For rough step reporting the vegetation category or attribute of (FIRST\_CATE) is used to report the vegetation gains. For each file the attribute table was opened and the records were summarized by FIRST\_CATE and placed in a Acq\_Veg\_RSX.dbf (X=1 to 8) and then imported into the Excel reporting spreadsheet.

### **Rough Step – Vegetation Gains clipped to Criteria Cells.**

The AR\_Acq\_RS\_Veg.shp file was unioned with the Criteria Cells to create a new shape file AR\_Acq\_RS\_Veg\_CC.shp with a total of 4442 records. Those records representing criteria cells without gains were removed from the file leaving 2482 records. Fields not needed for reporting were removed from the file. Those areas designated as “Not a Part” were deselected and the Area and Acreage was Recalculated with the total matching to 25,922.374 acres. Two fields were added to account for acreage inside and outside of criteria cells (Acres\_In and Acres\_Out) and these fields were recalculated. Acres\_Out of criteria cells was 4326.744 acres and Acres\_In criteria cells was 21,595.631 acres.

The AR\_Acq\_RS\_Veg\_CC.shp file was then broken up into separate Rough Step reporting files. For each StepNum (1 through 8) the appropriate records for the rough step were selected and then saved to a separate file (AR\_Acq\_RS\_Veg\_CC\_X.shp (X=1 to 8 ).

AR_ACQ_RS_VEG_CC_1	12 records	181.463 acres in cells
AR_ACQ_RS_VEG_CC_2	1122 records	12517.471 acres in cells
AR_ACQ_RS_VEG_CC_3	125 records	1838.365 acres in cells
AR_ACQ_RS_VEG_CC_4	301 records	2742.411 acres in cells
AR_ACQ_RS_VEG_CC_5	14 records	86.982 acres in cells
AR_ACQ_RS_VEG_CC_6	414 records	1286.945 acres in cells
AR_ACQ_RS_VEG_CC_7	293 records	1030.288 acres in cells
AR_ACQ_RS_VEG_CC_8	201 records	1911.707 acres in cells

For rough step reporting the vegetation category or attribute of (FIRST\_CATE) is used to report the vegetation gains. For each file the attribute table was opened and the records were summarized by FIRST\_CATE and placed in a Acq\_Veg\_CC\_RSX.dbf (X=1 to 8) and then imported into the Excel reporting spreadsheet.

### **Rough Step – Vegetation Gains with some lands outside of Cells**

In review of the Rough Step numbers for the various units with RCA Staff and Dudek in late September it was determined that a number of the properties that were outside of the criteria cells representing 4326.744 acres should be included with the gains for

Rough Step Calculations. The bulk of these lands were acquired during the development of the plan and represented lands acquired locally, state and federal land acquisitions as the MSHCP was being developed. The remainders of the lands that were added back into the rough step calculations represented slivers of land were the parcels did not quite match up with the cells or with the public quasi public lands.

The AR\_Acq\_RS\_Veg\_CC.shp file with a total of 2482 records representing 25,922.374 acres was used as a starting point. A text field was added to the file RS\_Calcs with values of Yes, No and NAP. One of these values were placed in the cell based on a review of the acquisition and the process used by Dudek to develop cell criteria and the numbers for the rough step acreage categories..

The following properties had areas outside of the criteria cells that were identified as not to be counted for the rough step calculations:

<b>Acquisition - Project Name</b>	<b>Acq Date</b>	<b>Total Acres</b>	<b>Year</b>	<b>Total Acres Outside of Cells</b>	<b>Total Acres Inside of Cells</b>
BUTCHART	6/7/2002	39.558	Prior	39.558	0.000
KB DONATION - Sec 7 404 FG					
1600 Mitigation	5/27/2005	24.491	2005	23.885	0.605
OAK VALLEY PHASE 1	9/19/2003	365.569	Prior	233.285	132.284
RIVERSIDE CLARK	7/5/2005	724.193	2005	76.892	647.300
ROTH	9/19/2002	82.782	Prior	82.782	0.000
USA	6/29/2000	1232.847	Prior	1232.847	0.000
		2469.439		1689.250	780.190

Those areas on these properties that had areas in the criteria cells totaling to 780.190 acres were of course included in the rough step gains calculations. Most of this was part of the Riverside Clark Acquisition in 2005. The remaining acres of acquisitions outside of criteria cells that were identified as being appropriate to include in the rough step calculations were either sliver polygons or acquisitions such as AD161, El Sobrante Landfill, Johnson Ranch, and portions of Wilson Creek.

The RS\_Calc attribute for both NAP and Yes was selected and then the records were saved to a new file AR\_Acq\_RS\_Veg\_CC\_Final.shp with 2416 records with a total of 24,237.235 acres including Acres In Cells with 21,595.631 acres and Acres outside of cells counted for Acres Out = 2641.605 acres

The AR\_Acq\_RS\_Veg\_CC\_Final.shp file was then broken up into separate Rough Step reporting files. For each StepNum (1 through 8) the appropriate records for the rough step were selected and then saved to a separate file (AR\_Acq\_RSX\_Veg\_CC\_Final.shp (X=1 to 8 ).

AR_ACQ_RS1_VEG_CC_Final	12 records	181.463 acres
AR_ACQ_RS2_VEG_CC_Final	1074 records	12528.393 acres
AR_ACQ_RS3_VEG_CC_Final	125 records	1862.840 acres
AR_ACQ_RS4_VEG_CC_Final	295 records	3236.531 acres



AR_ACQ_RS5_VEG_CC_Final	14 records	91.338 acres
AR_ACQ_RS6_VEG_CC_Final	407 records	3096.718 acres
AR_ACQ_RS7_VEG_CC_Final	288 records	1324.550 acres
AR_ACQ_RS8_VEG_CC_Final	201 records	1915.403 acres

For rough step reporting the vegetation category or attribute of (FIRST\_CATE) is used to report the vegetation gains. For each file the attribute table was opened and the records were summarized by FIRST\_CATE and placed in a Acq\_Veg\_CCF\_RSX.dbf (X=1 to 8) and then imported into the Excel reporting spreadsheet.

### **Conservation By Area Plan**

The AR\_Acq\_RS\_Veg.shp file was then unioned against the TLMA.AreaPlan\_Bdys sde file to create AR\_Acq\_RS\_Veg\_AP.shp. This file contained 1552 records. Those records without a acquisition/gain were then removed leaving a file with 1528 records. Three small records that overlapped outside the boundary of the area plan were corrected. Fields not needed for reporting were then removed from the file. Acreage was not recalculated at this point.

The AR\_Acq\_RS\_VEG\_AP.shp file with 1528 records was then unioned with the TLMA.AreaPlan\_Subunits sde layer to create AR\_Acq\_RS\_VEG\_AP\_SUB.shp creating a file with 1921 records. Those records without a acquisition/gain were then removed leaving a file with 1772 records. Three small records that overlapped outside the boundary of the area plan were corrected. Fields not needed for reporting were then removed from the file. Acreage was then recalculated on those gains and acquisitions (Not for areas listed as Not a Part = ConsType ie 1759 records of the 1772) Again the total number of acres 25,922.374 were verified.

### **Area Plan – SubUnit Reporting**

For reporting the acquisitions/gains by area plan or subunit the attributes of (Name) representing the area plan or (Subunit) representing the subunits were used to summarize the records. The attribute table was opened and the records were summarized by Name and placed in a Acq\_AP.dbf and then imported into the Excel reporting spreadsheet. The attribute table was opened and the records were summarized by Subunit and placed in a Acq\_AP\_Sub.dbf and then imported into the Excel reporting spreadsheet.

Then for 2005 reporting all records with a Year = 2005 were then selected and placed in a file AR\_Acq\_RS\_Veg\_AP\_Sub\_2005.shp with 346 records. The attribute table was opened and the records were summarized by Name and placed in a Acq\_AP\_2005.dbf and then imported into the Excel reporting spreadsheet. The attribute table was opened and the records were summarized by Subunit and placed in a Acq\_AP\_Sub\_2005.dbf and then imported into the Excel reporting spreadsheet.

### **Conservation By Jurisdiction**

The WRC\_RCA\_AR\_Acquisitions\_Gains.shp file (25,922.37 acres – 385 records) was then unioned with the TLMA.Cities sde layer to create AR\_Acq\_Jur.shp with 450 records. All records that did not have a “Gains” component were dropped from the file leaving 435 records. Those records within the County were then selected and the value of County was calculated in the Labelname field. Several fields not needed where then

dropped from the file. Acreage was then recalculated on those gains and acquisitions (Not for areas listed as Not a Part = ConsType ie 431 records of the 435) and double checked as 25,922.37. The attribute table was opened and the records were summarized by LabelName and placed in a Acq\_Jur.dbf and then imported into the Excel reporting spreadsheet.

Then for 2005 reporting all records with a Year = 2005 were then selected and placed in a file AR\_Acq\_Jur\_2005.shp with 56 records. The attribute table was opened and the records were summarized by LabelName and placed in a Acq\_Jur\_2005.dbf and then imported into the Excel reporting spreadsheet.

## GIS Shape Files - Losses

### WRC\_Project\_Losses\_2004.shp

2849 Records	Total Acres	18,036.961 acres
	Acres in Cells	3,835.450 acres
	Acres outside of Cells	14,201.510 acres

### WRC\_Project\_Losses\_Corrected\_2004.shp

2787 Records	Total Acres	17,286.947 acres
	Acres in Cells	3,531.337 acres
	Acres outside of Cells	13,755.611 acres

### WRC\_Project\_Losses\_Reported\_2005.shp

7599 Records	Total Acres	26,724.300 acres
	Acres in Cells	4,750.343 acres
	Acres outside of Cells	21,973.957 acres

### WRC\_Project\_Losses\_2005.shp

5671 Records	Total Acres	19,084.648 acres
	Acres in Cells	3,472.322 acres
	Acres outside of Cells	15,612.327 acres

### WRC\_RCA\_AR\_Project\_Losses.shp

8458 Records	Total Acres	36,371.596 acres
	Acres in Cells	7,003.659 acres
	Acres outside of Cells	29,367.938 acres

## Losses General Data and Numbers

The WRC\_RCA\_AR\_Project\_Losses.shp file (36371.596 acres – 8458 records) was then unioned with the Rough Step Boundaries to create AR\_Losses\_RS.shp with 8515 records. All records that did not have a “Loss” component were dropped from the file leaving 8503 records. Several fields not needed were then dropped from the file. Area and acres were then recalculated and double checked as 36371.596 acres for the 8503 records.

Then the AR\_Losses\_RS.shp was unioned with the vegetation wrc\_mshcp\_veg polygon to create a new shape file AR\_Losses\_RS\_Veg.shp with a total of 30168 records. Those records not representing a project with vegetation categories were then removed from the file leaving 12,971 records.

Total area and acreage was recalculated and it was noticed that eight loss records had very small areas outside of the boundary of the vegetation file and vegetation values for these areas were not applied. The total acreage of these lands was .497 acres. These records were dropped from the AR\_Losses\_RS\_Veg.shp file leaving 12,963 records consisting of 36,371.099 total acres for reporting, with 29,367.441 acres outside of criteria cells and 7,003.658 acres within criteria cells. Fields and attributes not needed for reporting were then removed from the shape file.

### **Rough Step – Vegetation Losses**

The AR\_Losses\_Veg.shp file was then broken up into separate Rough Step reporting files. For each StepNum (1 through 9) the appropriate records for the rough step were selected and then saved to a separate file (AR\_Losses\_RS\_Veg\_X.shp (X=1 to 9 ).

AR_LOSSES_RS_VEG_1	1270 records	3553.118 acres
AR_LOSSES_RS_VEG_2	1102 records	3558.892 acres
AR_LOSSES_RS_VEG_3	1468 records	6023.535 acres
AR_LOSSES_RS_VEG_4	1557 records	4418.187 acres
AR_LOSSES_RS_VEG_5	2448 records	5186.289 acres
AR_LOSSES_RS_VEG_6	1755 records	5417.049 acres
AR_LOSSES_RS_VEG_7	2112 records	4544.824 acres
AR_LOSSES_RS_VEG_8	929 records	2821.781 acres
AR_LOSSES_RS_VEG_9	322 records	847.424 acres

For rough step reporting the vegetation category or attribute of (FIRST\_CATE) is used to report the vegetation losses. For each file the attribute table was opened and the records were summarized by FIRST\_CATE and placed in a Losses\_Veg\_RSX.dbf (X=1 to 9) and then imported into the Excel reporting spreadsheet. (AR Rough Step Discussion Data 08302006.xls )

The vegetation losses for 2005 were also needed by Rough Step. Each Loss file AR\_Losses\_RS\_Veg\_X (X = 1 to 9).shp was opened and the YearReport attribute was selected for 2005. These records were then saved as AR\_Losses\_RS\_Veg\_X\_2005.shp (X=1 to 9). Each of those files were then opened and were summarized by FIRST\_CATE and placed in a Losses\_Veg\_2005\_RSX.dbp file (X=1 to 9) and were then imported into the AR Rough Step Discussion Data 08302006.xls reporting spreadsheet.

### **Losses By Area Plan**

The AR\_Losses\_RS\_Veg.shp file was then unioned against the TLMA.AreaPlan\_Bdys sde file to create AR\_Losses\_RS\_Veg\_AP.shp with a total of 13138 records. Five records were found totaling to less than .002 acres, that did not have an area plan designation since they are on the county boundary and none were in cells and they were removed. Those records without a project/permit loss were then removed leaving a file with 13,109 records. Attribute Fields not needed for reporting were then removed from the file. Acreage was not recalculated at this point.

The AR\_Loss\_RS\_VEG\_AP.shp file with 13,109 records was then unioned with the TLMA.AreaPlan\_Subunits sde layer to create AR\_Loss\_RS\_VEG\_AP\_SUB.shp creating a file with 13,478 records. Two records with insignificant acreage that did not have a area

plan subunit were also removed. Those records without a permit/project loss record were then removed leaving a file with 13,327 records.

Fields not needed for reporting were then removed from the file. Area and acreage was then recalculated on all losses and applied to those fields representing both Acreage In (7003.660 acres) and Acreage Out (29,367.440 acres) of Criteria Cells. The total number of acres loss was verified at 36,371.097 acres.

### **Area Plan Reports**

For reporting the Permit/Projects losses by area plan the attributes of (Name) representing the area plan were used to summarize the records. The attribute table was opened and the records were summarized by Name and placed in a Losses\_AP.dbf.

Then for 2005 reporting all records with a Year = 2005 were then selected and placed in a file AR\_Losses\_RS\_Veg\_AP\_Sub\_2005.shp with 8523 records. The attribute table was opened and the records were summarized by Name and placed in a Loss\_AP\_2005.dbf file. The files were then imported into the Excel file: AR Rough Step Discussion Data 08302006.xls the reporting spreadsheet.

### **SubUnit Reports**

For reporting the Permit/Projects losses by subunit the attributes of (Subunit) representing the subunits were used to summarize the records. The attribute table was opened and the records were summarized by Name and placed in a file Losses\_AP\_Sub.dbf.

Then the file AR\_Losses\_RS\_Veg\_AP\_Sub\_2005.shp with 8523 records was selected. The attribute table was opened and the records were summarized by Subunit and placed in a Losses\_AP\_Sub\_2005.dbf file. The files were then imported into the Excel file: AR Rough Step Discussion Data 08302006.xls the reporting spreadsheet.

### **Losses by Jurisdiction**

The WRC\_RCA\_AR\_Projects\_Losses.shp file (36,371.596 acres – 8458 records) was then unioned with the TLMA.Cities sde layer to create AR\_Losses\_Jur.shp with a total of 8548. All records that did not have a “Loss” component were dropped from the file leaving 8533 records. Those records within the County were then selected and the value of County was calculated in the Cityname and Labelname fields.

Several fields not needed were then dropped from the file. Area and acreage was then recalculated on the permit and project losses and applied as appropriate to Acres in and Acres outside of Criteria Cells. Acreage was again double checked as 36,371.596 acres.

The attribute table was opened and the records were summarized by LabelName and placed in a Losses\_Jur.dbf file.

Then for 2004 reporting all records with a Year = 2004 were then selected and placed in a file AR\_Losses\_Jur\_2004.shp with 2824 records. The attribute table was opened and the records were summarized by LabelName and placed in a Losses\_Jur\_2004.dbf and then imported into the Excel reporting spreadsheet.

Then for 2005 reporting all records with a Year = 2005 were then selected and placed in a file AR\_Loss\_Jur\_2005.shp with 5709 records. The attribute table was opened and the records were summarized by LabelName and placed in a Losses\_Jur\_2005.dbf and then imported into the Excel reporting spreadsheet.

The dbf files were then imported into the Excel file: AR Rough Step Discussion Data 08302006.xls the reporting spreadsheet.

**Permittees Losses since start of MSHCP**  
**Based on union with GIS Cities Layer**  
**Losses from June 22,2004 to Dec 31,2005**

<b>NAME</b>	<b>Records</b>	<b>Total Acres</b>	<b>Acres in Cells</b>	<b>Acres Outside of Cells</b>
BANNING	127	214.593	0.000	214.593
BEAUMONT	79	1331.032	66.521	1264.511
CALIMESA	140	449.682	93.714	355.968
CANYON LAKE	66	30.494	0.357	30.137
CORONA	107	866.413	106.072	760.341
COUNTY	5747	22146.747	4471.444	17675.303
HEMET	103	1566.521	116.928	1449.593
LAKE ELSINORE	245	1940.356	1020.964	919.392
MORENO VALLEY	163	1315.430	0.000	1315.430
MURRIETA	453	2045.835	832.184	1213.652
NORCO	40	132.502	0.000	132.502
PERRIS	179	1077.830	69.623	1008.206
RIVERSIDE	363	1056.372	29.853	1026.520
SAN JACINTO	106	987.435	9.139	978.296
TEMECULA	615	1210.355	186.860	1023.495
	8533	36371.596	7003.658	29367.937

**Losses by Permittees – 2005**  
**Based on union with GIS Cities Layer**  
**Losses from Jan 1,2005 to Dec 31,2005**

<b>NAME</b>	<b>Records</b>	<b>Total Acres</b>	<b>Acres in Cells</b>	<b>Acres Outside of Cells</b>
BANNING	94	149.142	0.000	149.142
BEAUMONT	67	465.870	0.000	465.870
CALIMESA	121	423.342	93.604	329.738
CANYON LAKE	62	30.451	0.346	30.105
CORONA	55	78.388	6.576	71.812
COUNTY	3552	11884.634	2344.357	9540.277
HEMET	73	969.708	0.000	969.708
LAKE ELSINORE	140	1047.279	519.018	528.262
MORENO VALLEY	122	909.248	0.000	909.248
MURRIETA	329	770.692	337.559	433.133
NORCO	19	20.287	0.000	20.287
PERRIS	136	588.565	0.000	588.565

RIVERSIDE	308	847.763	10.906	836.857
SAN JACINTO	82	330.081	9.139	320.942
TEMECULA	549	569.200	150.818	418.382
	5709	19084.648	3472.322	15612.327

**No Reportable Permits/Projects for 2005 within Criteria Area for:**

Banning  
 Beaumont  
 Hemet  
 Moreno Valley  
 Norco  
 Perris

**Expedited Project Review (SFR-Mobiles in Criteria Cells)**

From the AR\_Losses\_RS.shp shape file with 8503 records all records for the year of 2005 were selected and placed in a new shape file AR\_Losses\_RS\_2005.shp with a total of 5692 records and a total of 19084.648 acres for the projects and permits.

Since this file has been broken up by Criteria Cells and projects and permits are split based on their location the Dissolve command was used to create a projects/permits layer that represented unique individual projects for 2005. Dissolve fields included Rough Step Number and Permit\_ID. Statistics for fields Acres was also created.

The file AR\_Losses\_RS\_2005\_Proj-Permits.shp had 4831 unique records of Permit\_ID and a total acreage of 19084.648 acres as expected. To obtain the number of permits for each rough step the Stepnum was used to summarize the permits.

To establish the numbers for the ERP projects the AR\_Losses\_RS\_2005.shp file with 5692 records had those records selected that had attributes for the Review field as either "EPR or Unknown". These records were saved to a file AR\_Losses\_RS\_2005\_EPR.shp that contained 451 records with a total of 1776.198 acres. Of the total acreage 254.670 acres of these types of projects were outside of criteria cells while 1521.528 acres were within criteria cells.

To develop numbers for the EPR-ERP Permits for 2005 the shape file AR\_Losses\_RS\_2005\_EPR.shp was selected. These files were then broken up into a series of files for each rough step. AR\_Losses\_RS\_X\_2005\_EPR.shp where (X = 1 thru 9). These files were then taken and summarized on Permit\_ID to create a dbf file AR\_Losses\_RSX\_EPR.dbf where (X = 1 thru 9) for each rough step. These series of nine dbf files were then imported into the Excel file:

**EPR Projects Found for 2005**

The file AR\_Losses\_RS\_2005\_Proj-Permits.shp with 4831 unique records based on the Permit\_ID with a total acreage of 19084.648 acres was used to determine EPRs. The AR\_Losses\_RS\_2005\_Proj-Permits file was joined to the WRC\_Project\_Losses\_2005.shp file to link back in the attributes of the projects and

permits that got dropped during the dissolve process. All records in AR\_Losses\_RS\_2005\_Proj-Permits.shp were selected and exported to another file Projects\_2005.shp.

The TLMA.Intake\_Boundaries SDE file was then added to the project map file. The TLMA.Intake\_Boundaries sde file and Projects\_2005.shp were then unioned together to create a shape file EPR\_Projects\_fd.shp . The file was then opened for editing to determine what records were in common between the two files. Those records that did not match FID\_Projec = -1 and FID\_Intake = -1 were then selected and were removed from the file. Attributes and fields not needed were then removed from the shape file. The remaining records were then reviewed to determine their status. Several fields were then used to reduce the record count of the file to obtain only the EPR projects. The review field had values of EPR, JPR, Not in CCA, Unknown, and Vested. The values of JPR, Unknown and Vested were then selected. The Status field that came from the Intake file was then reviewed. The Status field had values of ERP Final, ERP Pending, JPR Approval, JPR Pending, Unknown and Withdrawn. The values of ERP Final and ERP Pending were then removed from the selected set of records. Finally again the Status field was used to add to the selected set all records that had a status of JPR Approval, JPR Pending, Unknown or Withdrawn. The entire record set was then reversed and those records flagged as EPR were then exported to a new shapefile EPR\_projects\_fd\_confirmed. Area and acreage values were recalculated for the file.

The shape file EPR\_Projects\_fd\_confirmed.shp then had the Stepnum = 1 to 9 selected and each rough step was saved to a new shape file EPR\_Conf\_RSX.shp where the X = 1 thru 9. Each of the dbf's for these shape files were then directly imported into the Excel reporting spreadsheet.

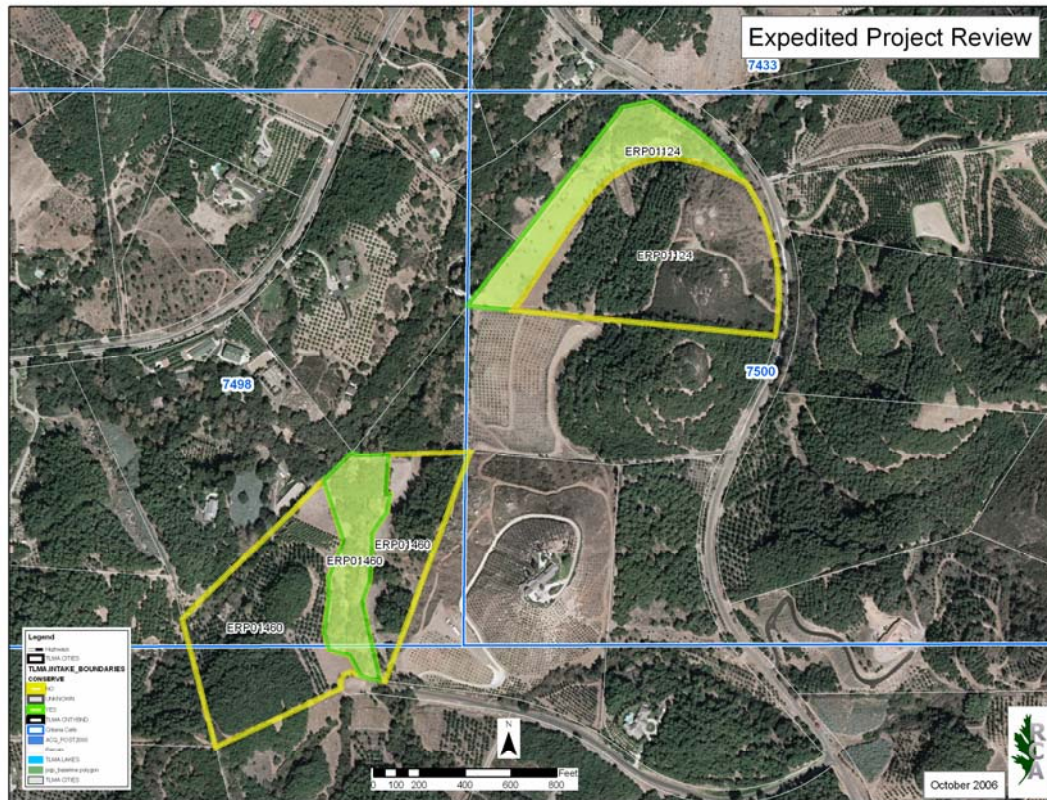
Within the spreadsheet it was then necessary to sort and summarize for each ERP project the appropriate conservation categories as Least Sensitive Portions and No Disturbance Areas in order to derive totals from the acreage, acres in and acres out of criteria cells.

### **Recommended Changes for Future Reporting Years**

While the efforts to obtain the permits and projects for 2005 from the permittees were started in January, information was not received from some permittees until late June. The efforts to assemble the data for 2005 continues the trend first observed in the initial efforts to obtain data for the 2004 report. Having the permittees report the data only once a year presents several problems for the RCA. First the individuals preparing the permit and project information either change or do not remember the processes and procedures that were used. While the outreach, meetings and training sessions with the permittees considerably aided in the process to obtain the permit and project data we believe that if we start requiring the permits and projects issued at the end of each month that may help reduce the timelines in obtaining the information.

The RCA will also be working on improving the reporting for EPR (Expedited Project Reviews) for Single Family Homes (SFR) and Mobile Homes on individual parcels within the Criteria Cells. This involves improving reporting already used by the County and a clearer definition on those areas of the parcel where the residences are located as well as areas designated as a no disturbance area.

## Exhibit 2 - EPR Reporting Example



Finally the RCA will increase its efforts to improve the information flow, reduce the impact of reporting, and provide integration processes and procedures with permit issuance systems and to aid permittees in determining if projects or permits are in criteria cells. The RCA will work with permittees to develop expanded and enhanced ArcGIS, ArcIMS, and ArcGIS Server GIS applications that will include enhanced capabilities to delineate permits and projects as well as handle rough step gains and losses reporting.

### Summary

- The RCA will be requiring reporting of Permits and Projects information from Permittees at the end of each month.
- ERP projects (SFR and Mobile Homes) in Criteria Cells will be reported each month and will include areas of no-disturbance and development polygons.
- The RCA will also work towards developing GIS applications that will be used to integrate permit and project data from the Permittees that will include the ability to determine the effect of losses and gains on the Vegetation Habitat in each rough step unit.