FFG-RFC Boundary Consistency Meeting

May 5-6, 2004 – LMRFC

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DOH Conference 2004

Meeting Overview

- **Review FFGIT findings**
- **Compare FFG parameters/options**
- **Methodology for consistency**
- **Group recommendations**
- **Example - LMRFC 3hr TRO change**

FFGIT Findings

- **Need to accelerate science/techniques for FFGS**
- **Causes of FFG inconsistency across RFC boundaries.**

1. Rainfall/runoff model used

2. Rainfall/runoff assigned parameters

3. Management of rainfall/runoff model

4. SNOW-17 assigned parameters

5. <u>Threshold runoff values</u>

6. <u>FFGS parameter settings/options</u>

7. Rainfall input sources

Short Term Solutions

FFGIT

- **Eliminate RFC boundary grid gaps**
- **Eliminate FFG grid overlaps**
- **Develop FFG consistency across adjacent RFC boundaries through RFC coordination visits**
- **Formalize methodology for field site visits to determine better threshold runoff values.**

FFG Consistency Meeting

Goal: Develop consistent FFG across RFC Boundaries

- **Attending RFCs**
  - **ABRFC, LMRFC, MARFC, NERFC, OHRFC, SERFC, and WGRFC**
- **Projected Deliverables**
  - **Consistent threshold runoff**
  - **Consistent FFG parameters/options**
  - **Eliminate all holes/gaps in TRO grid near/along RFC boundaries**
- **Use ABRFC/MBRFC meeting results and FFGIT findings as guideline**

Methodology

- **Review FFGS configurations**
  - **FFGUID User Controls - Grid Fill, Area Method, TRO values, and FFG limits.**
- **Other parameters and issues**
  - **Gridded TRO holes/gaps**
  - **Variation in R/R model used (SNOW-17)**
- **Utilize Arcview capabilities to analyze gridded TRO and FFG**

FFG User Controls

Min/Max Settings

	1 HR		3 HR		6 HR		12 HR		24 HR	
	min	max	min	max	min	max	min	max	min	max
ABRFC	0.5	6.0	0.5	6.0	0.5	6.0	N/A		N/A	
LMRFC	0.7	3.0	1.2	5.0	1.6	5.5	2.1	6.0	3.0	6.5
MARFC	0.1	3.3	0.1	5.5	0.1	5.9	0.1	6.3	0.1	6.5
NERFC	0.5	3.0	0.5	4.5	0.5	6.0	0.5	8.0	0.5	10.0
OHRFC	0.4	2.3	0.7	3.4	0.9	4.2	1.2	5.4	1.5	6.0
SERFC	0.1	3.0	0.1	5.0	0.1	5.2	0.1	5.5	0.1	6.2
WGRFC	0.1	3.5	0.2	5.5	0.4	7.5	N/A		N/A	

Headwater guidance issues not addressed

FFG User Controls

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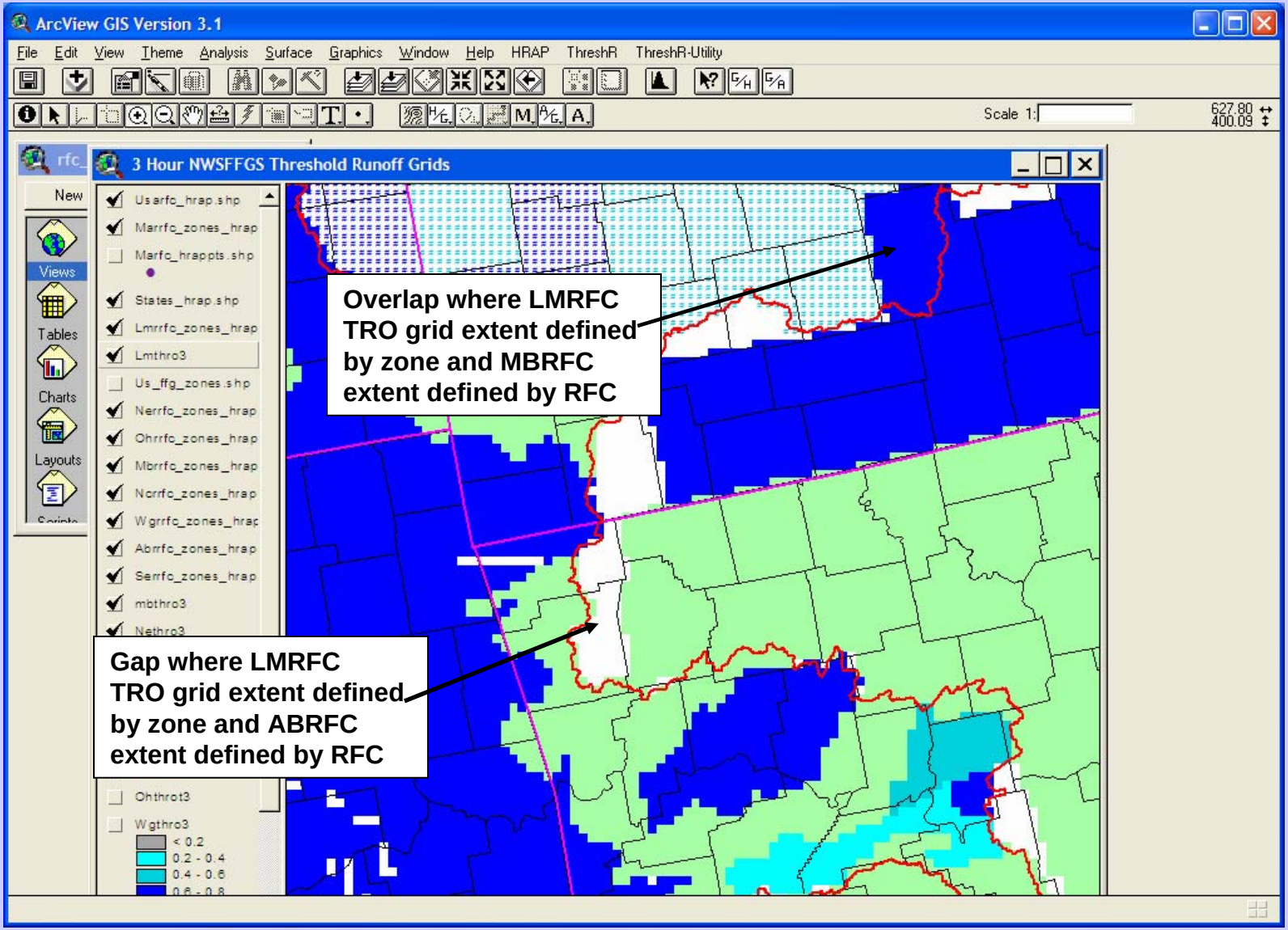
	Bankfull Factor	Area Method	Grid Fill
ABRFC	1.1	Avg	3
LMRFC	1.1	Min	3
MARFC	1.01	Avg	2
NERFC	1.1	Min	3
OHRFC	1.1	Avg	6
SERFC	1.1	Avg	3
WGRFC	1.1	Min	6

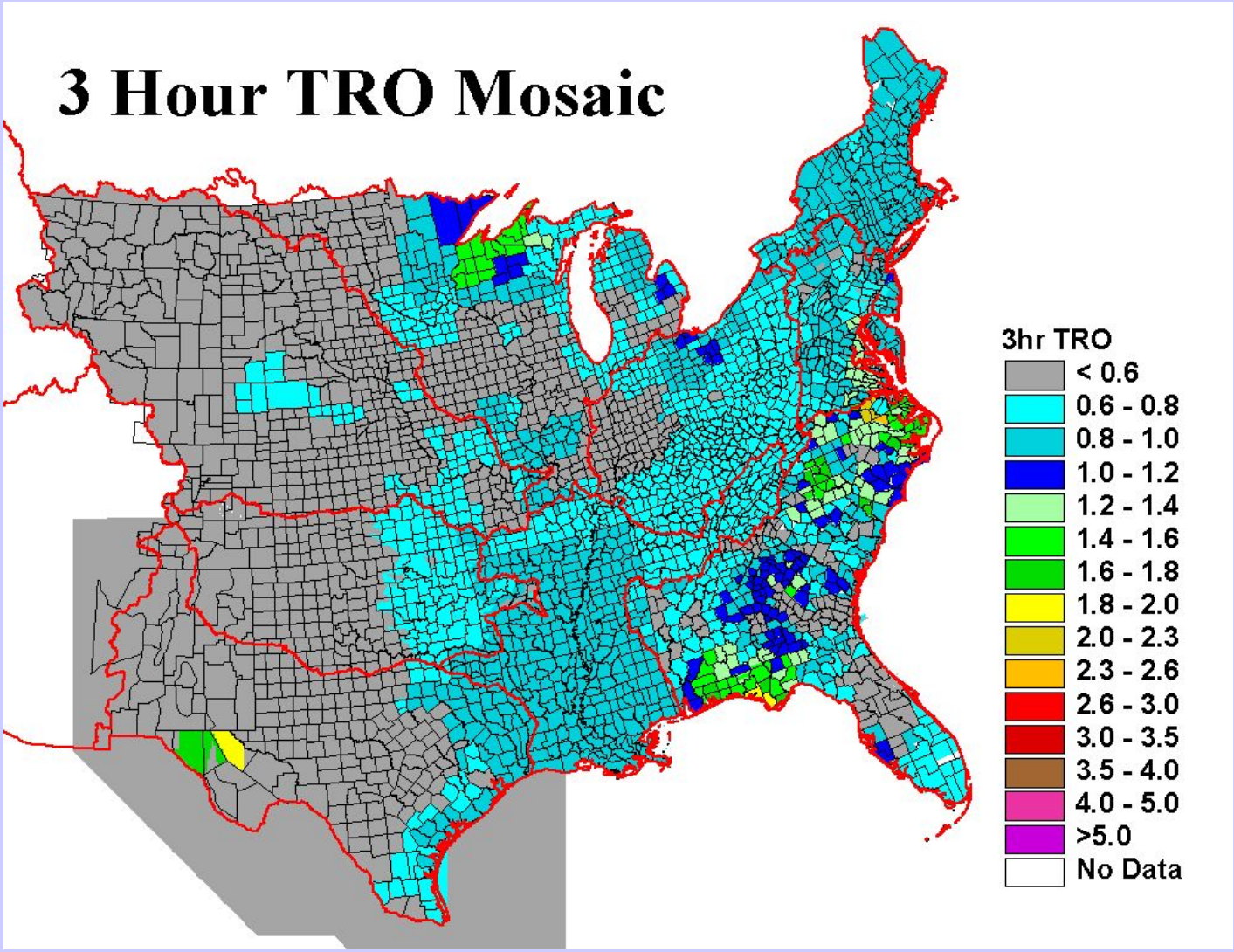
Significant User Control discrepancies:

- **Differences in Area Method used**
- **Differences in Grid Fill Control used for filling gaps in FFG grid (causes overlapping along RFC boundaries)**

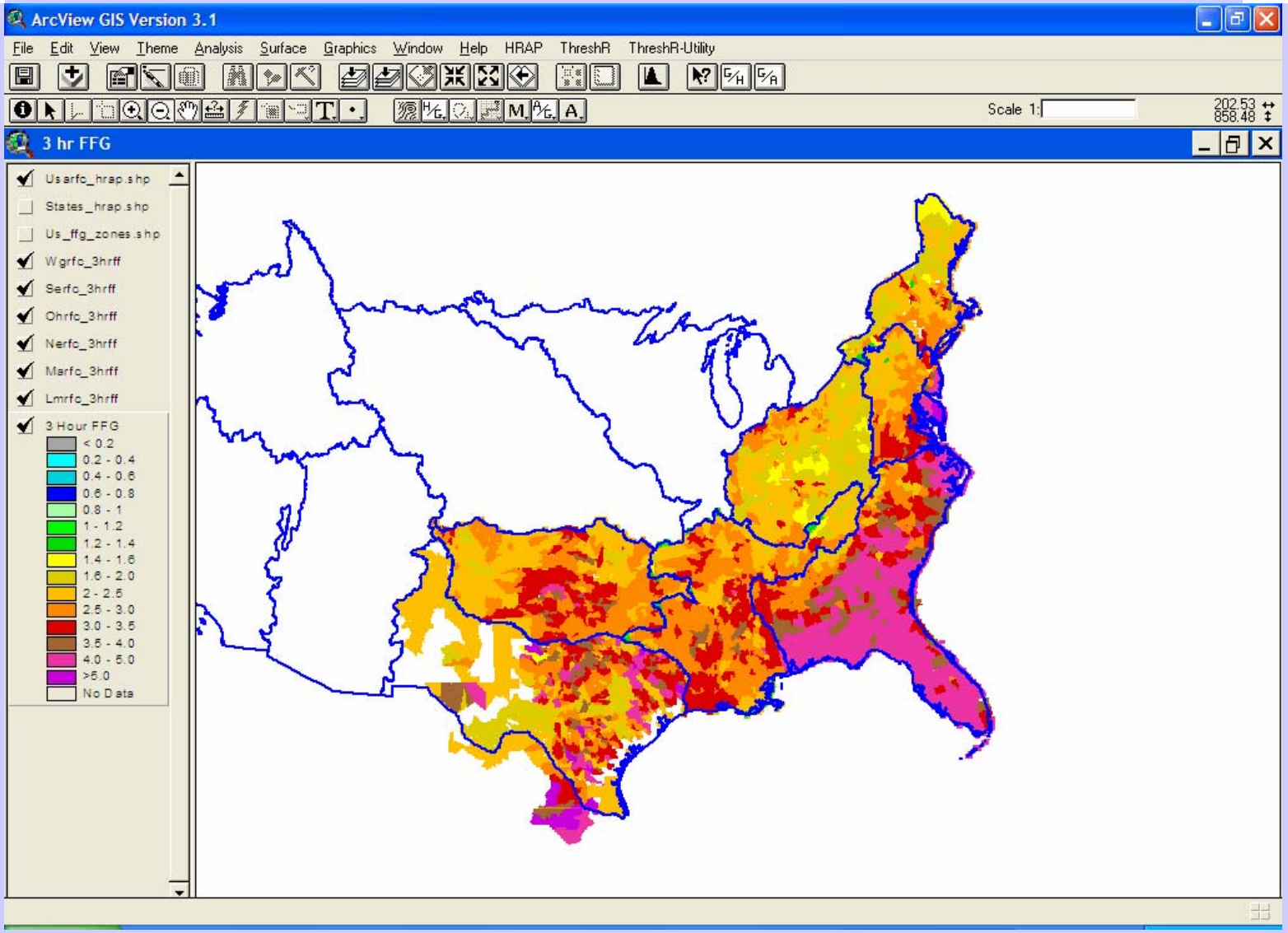
Example
Improper Grid Cell Assignment



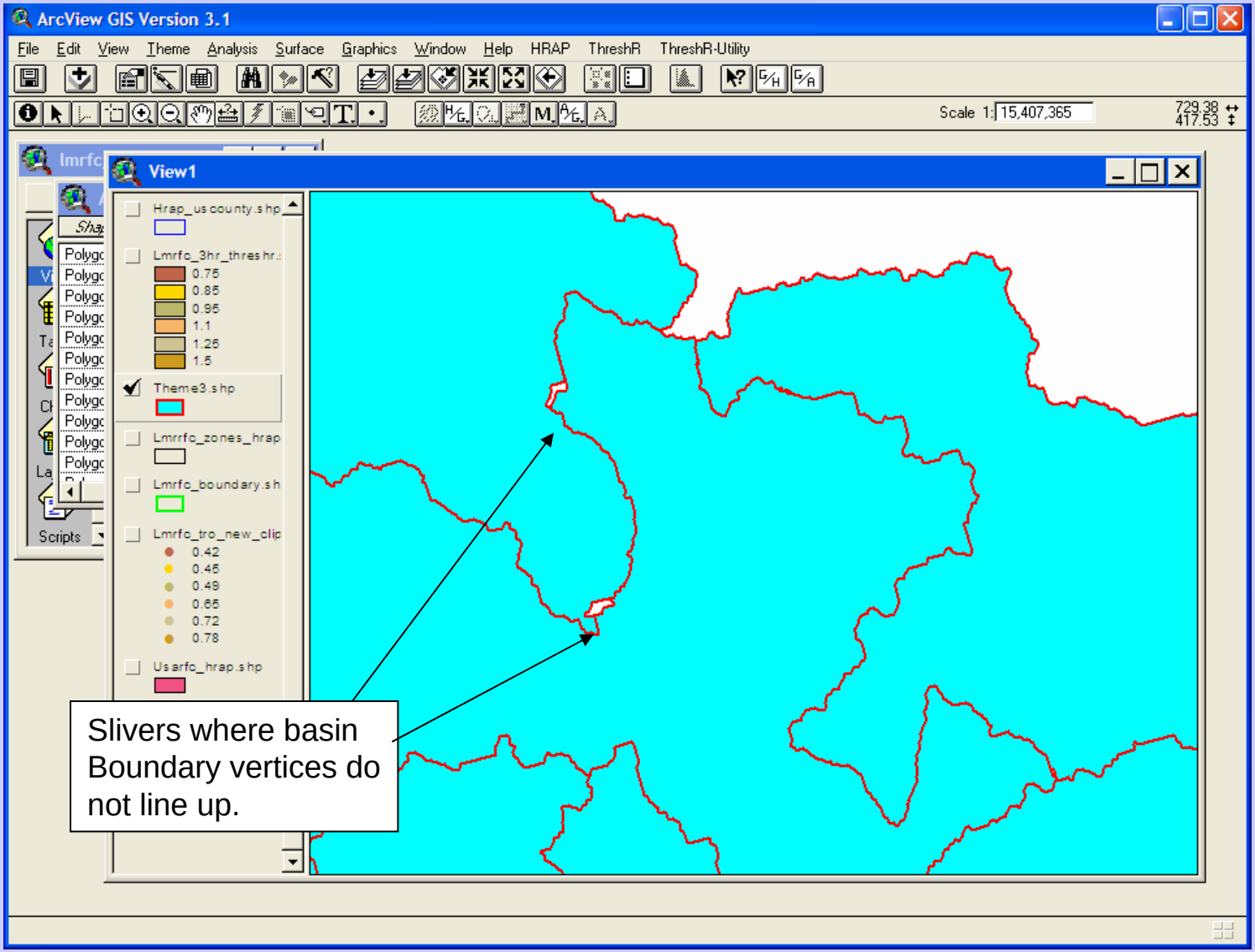
3-HR Threshold Runoff Grids



3-Hour Gridded FFG

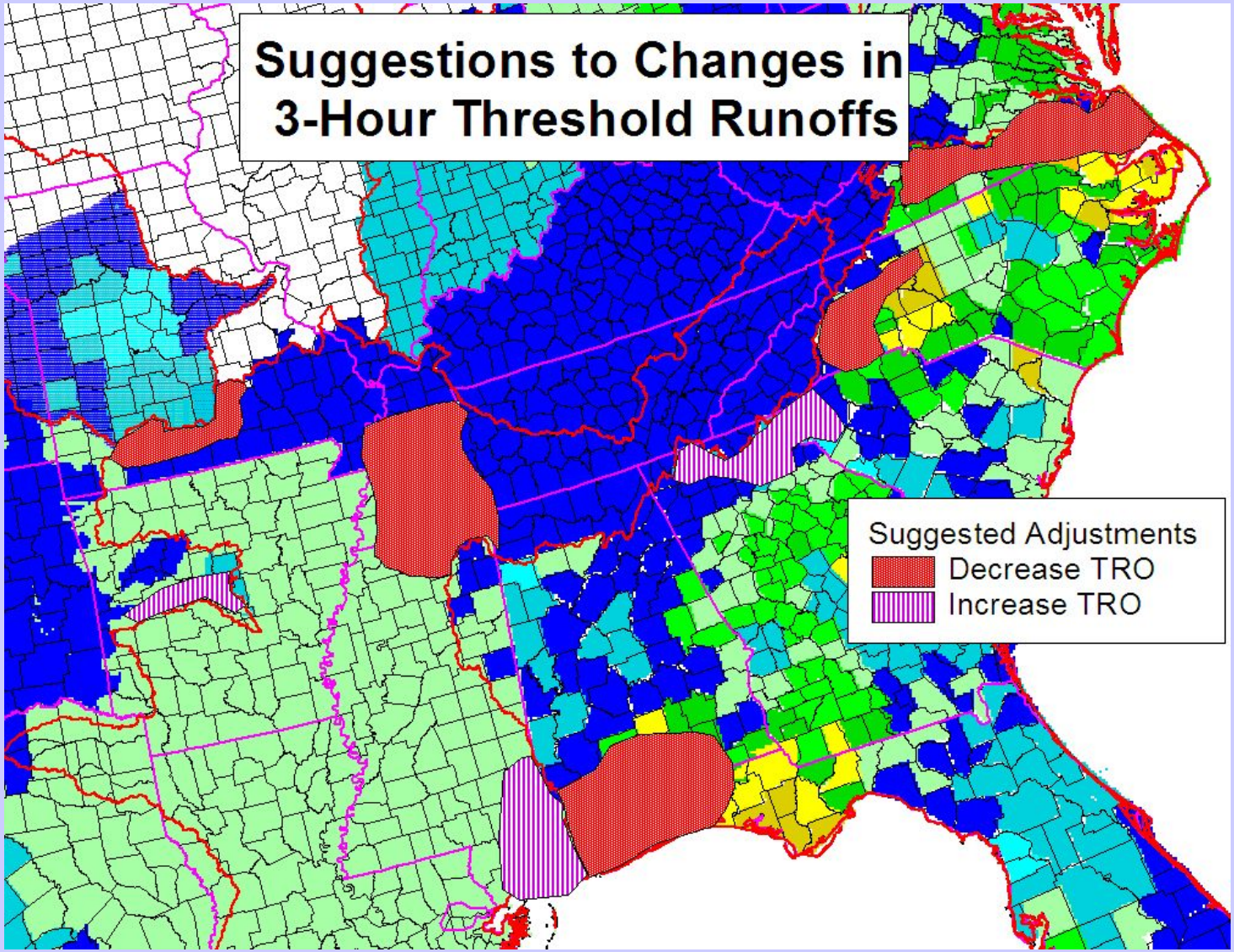


Basin Boundary Gaps



Threshold Runoff

Recommended Adjustments



Group Recommendations

RFCwide 1hr TRO Multipliers

	1hr	6hr	12hr	24hr
ABRFC	.73	1.5	N/A	N/A
LMRFC	.50 > .65	1.2	1.5	1.75
MARFC	.65	1.1	1.25	1.5
NERFC	.60	1.15	1.25	1.5
OHRFC	.50 > .65	1.15	1.5	2.0
SERFC	.75 > .65	1.05	1.2	1.5
WGRFC	.75 > .65	1.25	N/A	N/A

- **Coordinated change limited to 1-hr TRO multiplier**
  - **Consensus 1hr range: 0.60 to 0.73**

Group Recommendations

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- **Target Limits for Max FFG Settings**

	1 hr	3 hr	6 hr	12 hr	24 hr
Max (Old)	3.0 - 3.5 (2.3 - 6.0)	4.5 - 5.5 (3.4 - 6.0)	5.5 - 6.0 (4.2 - 7.5)	6.0 - 7.0 (5.4 - 8.0)	7.0 - 8.0 (6.0 - 10.0)

(Min limits not adjusted due to different models used)

- **RFCs using "minimum" method will switch to "average" for Area Computational Control**

Group Recommendations

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- **Use ArcInfo to "clean" RFC boundary definitions**
  - **Develop matching boundary vertices along borders**
  - **Export new basin outline in PPINIT format using "Hydro Shapefile Converter" and redefine in OFS.**

- **Use AV3 and AV8 tools**
  - **Clip TRO grids to match RFC boundary**
  - **Reset Grid Control=0 to eliminate grid overlaps**
  - **Fill all remaining holes**

- **Issue FFG at common synoptic times so WFOs can access complete FFG grids**

Group Recommendations

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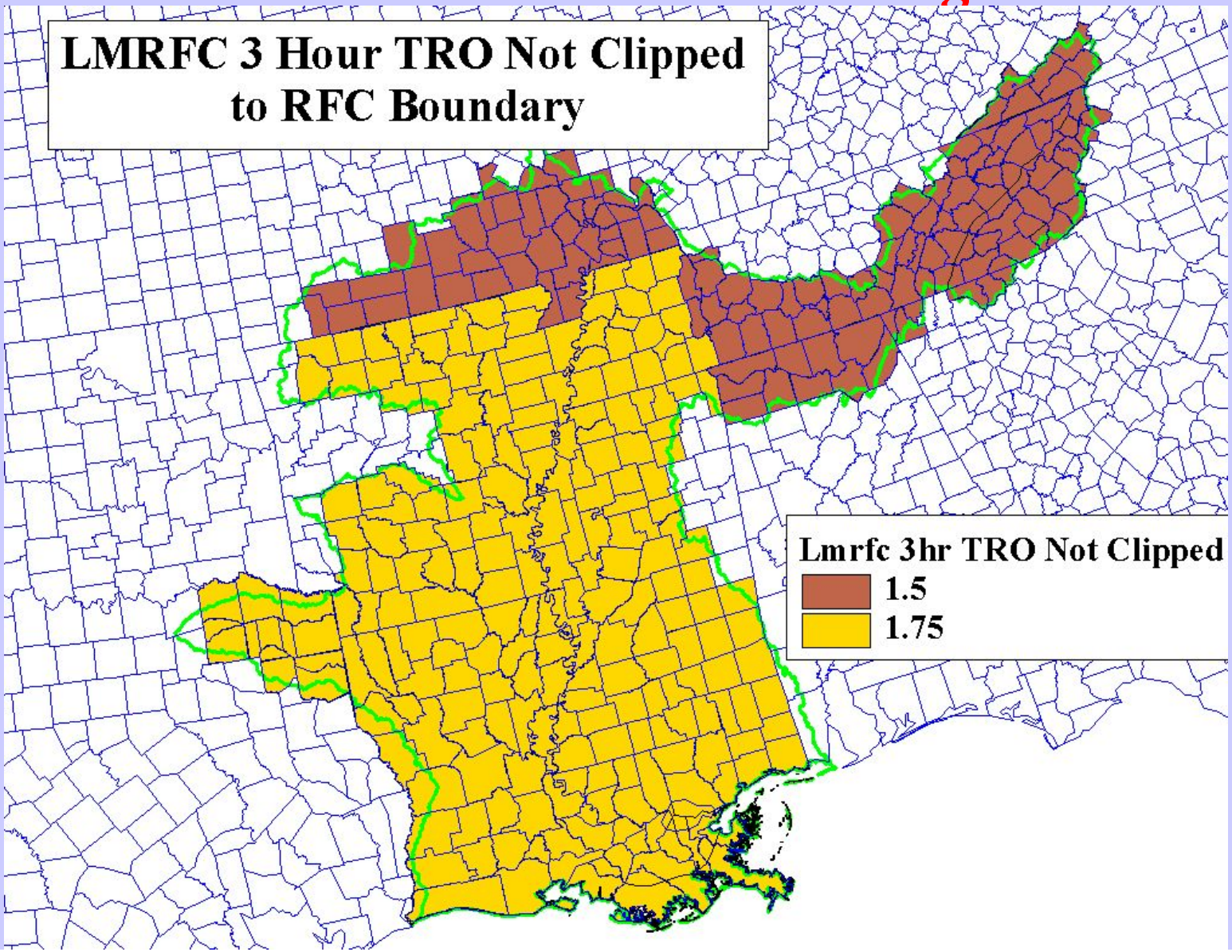
- **Share Boundary SAC-SMA parameters**
  - **For basins at/near/around boundary**
  - **May assist neighboring calibration efforts**
  - **May/may not improve FFG consistency**

- **Hold quarterly conference calls**
  - **Starting July 2004**
  - **Review progress**

LMRFC 3hr TRO Grid

before…Recommended Changes



LMRFC 3hr TRO Grid

after…Recommended Changes