

Editing Troop Control Data in ArcMap

- Open “FinalDatasetEdit.mxd”

- The first step is to limit the troop control data to the appropriate time slice. Since the troop data overlaps in order to assure you are editing the right troop extent we’ll first set a ‘definition query’ to limit the troop dataset to one time slice.

- First of all right click on the troop control layers and open the attribute table. Park this table someplace so you can clearly see the table and the map.

- Right click again on the layer and select properties, then the definition query tab.

The screenshot displays the ArcMap interface with the 'FinalDatasetEdit.mxd' project. The 'Layers' panel on the left shows the 'Troop Control' layer selected. A right-click context menu is open over the 'Troop Control' layer, with 'Open Attribute Table' highlighted. The 'Attributes of Troop Control' table is displayed in the main view, showing a list of 30 records. The table has columns for OBJECTID, Shape, Date, Control, EndDate, Shape_Length, and Shape_Area. The map on the right shows a geographical area with blue lines representing troop control boundaries. The status bar at the bottom indicates 'Record: 4' and 'Show: All Selected'.

OBJECTID	Shape	Date	Control	EndDate	Shape_Length	Shape_Area
1	Polygon	4/21/1994	RPF	4/22/1994	5.936866	1.000281
2	Polygon	4/23/1994	RPF	4/25/1994	5.691242	0.994151
3	Polygon	4/26/1994	RPF	5/4/1994	6.004967	1.044252
4	Polygon	5/20/1994	RPF	5/24/1994	6.417945	1.115521
5	Polygon	5/25/1994	RPF	5/28/1994	7.245279	1.168912
6	Polygon	5/29/1994	RPF	5/30/1994	7.260227	1.210366
7	Polygon	5/31/1994	RPF	6/8/1994	7.482233	1.259972
8	Polygon	5/5/1994	RPF	5/18/1994	5.927697	1.044854
9	Polygon	6/22/1994	RPF	6/27/1994	7.570488	1.291227
10	Polygon	6/28/1994	RPF	6/30/1994	7.475389	1.271444
11	Polygon	6/9/1994	RPF	6/21/1994	7.491886	1.28216
12	Polygon	7/1/1994	RPF	7/3/1994	7.564099	1.304785
13	Polygon	7/15/1994	RPF	7/17/1994	7.139105	1.505788
14	Polygon	7/18/1994	RPF	7/19/1994	7.418671	1.699615
15	Polygon	7/19/1994	RPF	7/19/1994	7.376808	1.692169
16	Polygon	5/19/1994	RPF	5/19/1994	6.360371	1.092778
17	Polygon	10/1/1993	RPF	3/8/1994	3.040221	0.103716
18	Polygon	3/9/1994	RPF	4/5/1994	3.16648	0.155913
19	Polygon	4/12/1994	RPF	4/13/1994	5.255706	0.62309
20	Polygon	4/14/1994	RPF	4/19/1994	5.276206	0.725644
21	Polygon	4/20/1994	RPF	4/20/1994	5.40645	0.827347
22	Polygon	4/6/1994	RPF	4/6/1994	4.850033	0.502308
23	Polygon	4/7/1994	RPF	4/11/1994	4.620196	0.524183
24	Polygon	7/15/1994	French	7/17/1994	5.110708	0.268134
25	Polygon	7/18/1994	French	7/18/1994	5.112144	0.272959
26	Polygon	7/19/1994	French	7/19/1994	5.131687	0.280404
27	Polygon	7/4/1994	RPF	7/4/1994	6.878893	1.357751
28	Polygon	7/5/1994	RPF	7/14/1994	7.160357	1.418974
29	Polygon	7/4/1994	French	7/4/1994	3.93971	0.154698
30	Polygon	7/5/1994	French	7/14/1994	4.851929	0.225089

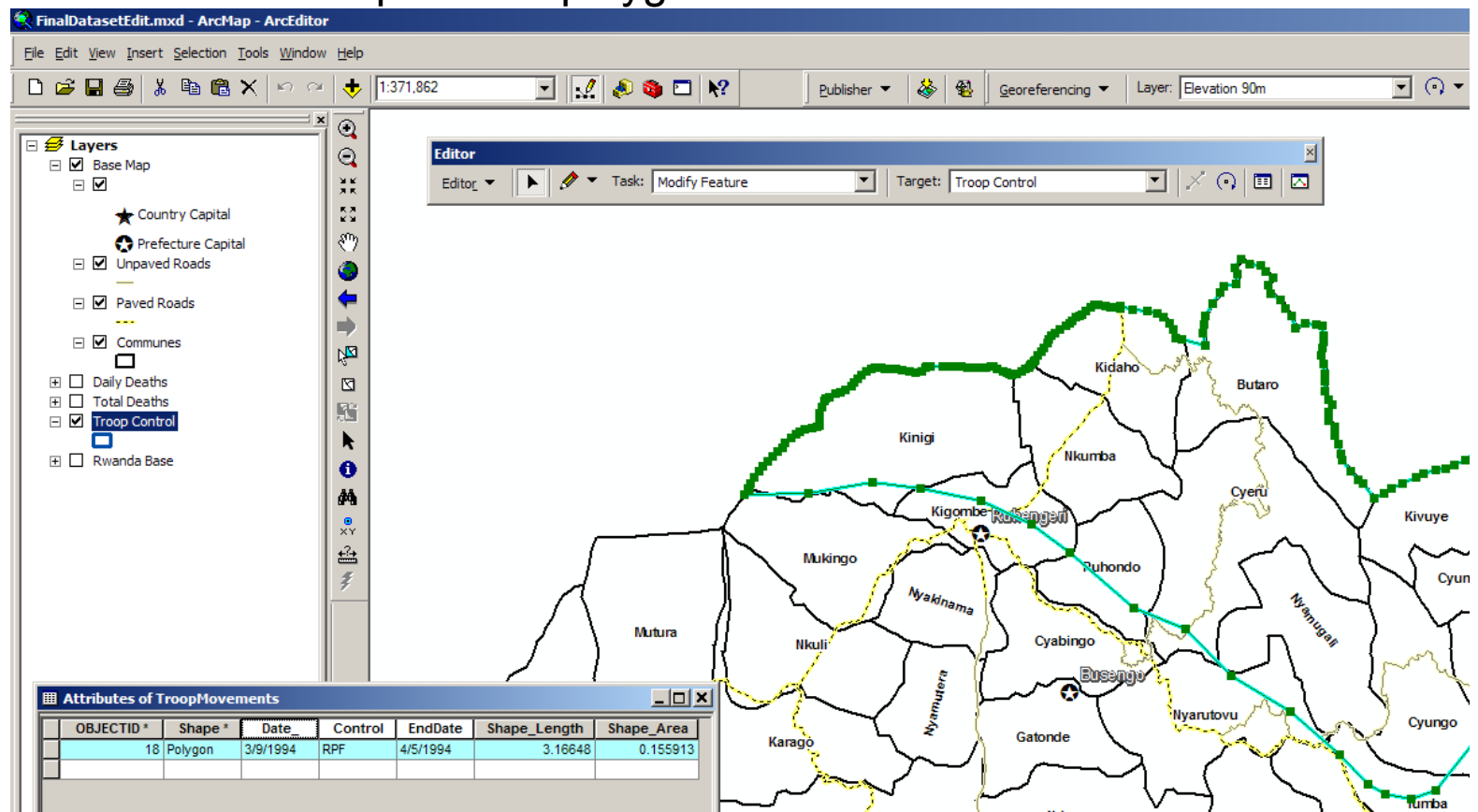
- Hit the query builder button.
- Set the query by click on the “Date_” attribute the “=” button and then click the Get Unique Values button and choose the appropriate start date for the troop data.
- This limits the troop polygons to the troop area for that date.

The screenshot displays the ArcMap interface with the following components:

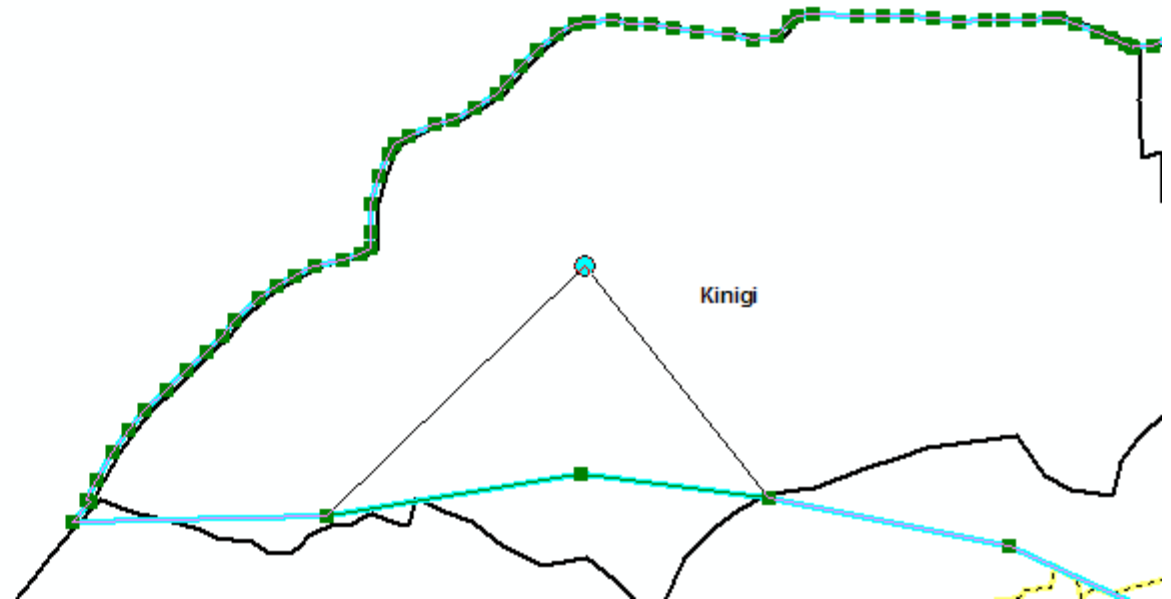
- Layers Panel:** Shows a list of layers including Base Map, Country Capital, Prefecture Capital, Unpaved Roads, Paved Roads, Communes, Daily Deaths, Total Deaths, Troop Control (selected), and Rwanda Base.
- Layer Properties Dialog:** The Definition Query tab is active, showing the query: `"Date_" = date '1994-03-09 00:00:00'`. The Query Builder... button is visible at the bottom.
- Query Builder Dialog:** Shows the selection criteria for the Troop Control layer. The field "Date_" is selected, and the date range is set from `date '1994-03-09 00:00:00'` to `date '1994-05-31 00:00:00'`. The "Get Unique Values" button is highlighted.
- Attributes of TroopMovements Table:** A table showing the attributes of the selected troop movement features. The table has columns: OBJECTID, Shape, Date, Control, EndDate, Shape_Length, and Shape_Area.

OBJECTID *	Shape *	Date	Control	EndDate	Shape_Length	Shape_Area
18	Polygon	3/9/1994	RPF	4/5/1994	3.16648	0.155913

- From the View drop down menu go to Toolbars and make sure the Editor Toolbar is checked.
- Go to the Editor Toolbar and check on Start Editing...
- Set the task to Modify Feature with a target of Troop Control. Then click on the black arrow on the tool bar
- Click anywhere within the troop control polygon



- Mouse over one of the green boxes and drag the node to the desired location.
- Move the nodes as needed to place the polygon boundary based on the new feedback
- On the Editor toolbar select save edits frequently. When you are done editing click Stop Editing.
- Once the polygon is properly adjusted go back to the definition query and pick the next date.
- Repeat until finished updating the troop control polygons.



Calculating Troop Control Deaths

Calculation of RPF Control Deaths:

1. Select Initial Date Range for Troop Control Area (as previously described)
2. Use a Definition Query to select only those dates from the total daily death by commune layer
3. Use the Select by Location to select the communes whose boundaries “are completely within” the RPF control area
4. Credit RPF for the deaths by copying the upper death values into a newly added RPF column in the Daily Commune Death Attribute Table
5. Select next Date Range for Troop Control Area and repeat....

All analysis run in ArcView GIS Software by ESRI

FinalDataset_ControlCounts.mxd - ArcMap - ArcEditor

File Edit View Insert Selection Tools Window Help

1:1,202,996

Georeferencing Layer: Cal4.tif

Editor Task: Cut Polygon Features Target: Layer: elevation90m 3D Analyst Layer: elevation90m

Layers

- zTroopMovements_Buffer200m_SinglePart
- CommuneDeathsDaily
- Rwanda Base 2
- Deaths by Commune
- Troop Movements
- FD-COM-TOTAL
- Rwanda

Layer Properties

Definition Query:

[FD_Deaths_day_1] > #04-04-1994 00:00:00# AND [FD_Deaths_day_1] < #04-06-1994 00:00:00#

Setting the Date Range Definition Query

Attributes of zTroopMovements_Buffer200m_SinglePart

OBJECTID	Shape	Date	Control	EndDate	BUFF_DIST	Shape_Length	Shape_Area
17	Polygon	10/1/1993	RPF	3/8/1994	0.001799	2.483592	0.107282
30	Polygon	3/9/1994	RPF	4/5/1994	0.001799	2.614313	0.159713
46	Polygon	4/6/1994	RPF	4/6/1994	0.001799	4.746978	0.510919
47	Polygon	4/7/1994	RPF	4/11/1994	0.001799	4.517419	0.532382
43	Polygon	4/12/1994	RPF	4/13/1994	0.001799	5.151097	0.63243
44	Polygon	4/14/1994	RPF	4/19/1994	0.001799	5.171053	0.735021
45	Polygon	4/20/1994	RPF	4/20/1994	0.001799	5.288376	0.837036
1	Polygon	4/22/1994	RPF	4/22/1994	0.001799	5.815635	1.010831
		4/25/1994	RPF	4/25/1994	0.001799	5.572582	1.004262
		5/4/1994	RPF	5/4/1994	0.001799	5.88342	1.054925
		5/18/1994	RPF	5/18/1994	0.001799	5.806396	1.055188
		5/19/1994	RPF	5/19/1994	0.001799	6.238119	1.104089
		5/24/1994	RPF	5/24/1994	0.001799	6.295157	1.126934
		5/28/1994	RPF	5/28/1994	0.001799	7.121013	1.181812
		5/30/1994	RPF	5/30/1994	0.001799	7.135396	1.223293
		6/8/1994	RPF	6/8/1994	0.001799	7.355545	1.273297
		6/21/1994	RPF	6/21/1994	0.001799	7.366958	1.295504
		6/27/1994	RPF	6/27/1994	0.001799	7.445011	1.304712
		6/30/1994	RPF	6/30/1994	0.001799	7.350262	1.284753
		7/3/1994	RPF	7/3/1994	0.001799	7.439292	1.318259
		7/4/1994	RPF	7/4/1994	0.001799	6.765876	1.370002
		7/4/1994	French	7/4/1994	0.001799	3.158633	0.161059
		7/14/1994	RPF	7/14/1994	0.001799	7.045106	1.43173
		7/14/1994	French	7/14/1994	0.001799	4.022997	0.233033
		7/17/1994	French	7/17/1994	0.001799	4.272599	0.276535
		7/17/1994	RPF	7/17/1994	0.001799	7.028321	1.518512
		7/18/1994	RPF	7/18/1994	0.001799	7.269991	1.712792
		7/18/1994	French	7/18/1994	0.001799	4.27654	0.281367
		7/19/1994	French	7/19/1994	0.001799	4.291879	0.288841
		7/19/1994	RPF	7/19/1994	0.001799	7.228514	1.705272

Attributes of CommuneDeathsDaily

FD_Deaths_prefname	FD_Deaths_day_	FD_Deaths_datenum	FD_Deaths_kill_lower	FD_Deaths_kill_media	FD_Deaths_kill_upper	Communes_Shape	Communes_COMMUNES	Communes_NAME1	FD_Deaths_OBJECTID	Communes_Shape_Length	Communes_Shape_Area	RPF
Kibuye	4/5/1994	12513	1	1	435	Polygon	0	Gisovu	17583	0.596422	0.013213	<Null>
Kibuye	4/5/1994	12513	1	1	406	Polygon	17	Gishyita	12745	0.418876	0.007009	<Null>
Kibuye	4/5/1994	12513	1	1	401	Polygon	53	Imabanza	12981	0.580327	0.012747	<Null>
Kibuye	4/5/1994	12513	1	1	352	Polygon	0	Rwamatamu	17229	0.551862	0.010398	<Null>
Kibuye	4/5/1994	12513	1	1	287	Polygon	36	Mwendo	7081	0.555163	0.013224	<Null>
Ruhengeri	4/5/1994	12513	0	0	0	Polygon	128	Butaro	1	0.611389	0.011608	<Null>
Ruhengeri	4/5/1994	12513	0	0	0	Polygon	82	Cyeru	119	0.703033	0.015318	<Null>
Byumba	4/5/1994	12513	0	0	0	Polygon	129	Kivuye	237	0.349863	0.005274	<Null>
Ruhengeri	4/5/1994	12513	0	0	0	Polygon	78	Kigombe	355	0.356974	0.005778	<Null>
Ruhengeri	4/5/1994	12513	0	0	0	Polygon	79	Ruhondo	473	0.319262	0.005736	<Null>
	4/5/1994	12513	0	0	0	Polygon	134	Gabiro	591	1.219895	0.07001	<Null>
Ruhengeri	4/5/1994	12513	0	0	0	Polygon	127	Nyamugali	709	0.522079	0.009102	<Null>
Ruhengeri	4/5/1994	12513	0	0	0	Polygon	75	Nyakinama	827	0.319556	0.005401	<Null>
Byumba	4/5/1994	12513	0	0	0	Polygon	130	Kibali	945	0.498404	0.009248	<Null>
Byumba	4/5/1994	12513	0	0	0	Polygon	126	Cyungu	1063	0.445323	0.008386	<Null>
Ruhengeri	4/5/1994	12513	0	0	0	Polygon	80	Cyabingo	1181	0.420432	0.006878	<Null>
Byumba	4/5/1994	12513	0	0	0	Polygon	139	Gihura	1299	0.710116	0.013549	<Null>

Records: 2 Show: All Selected Records: 0 out of 152 Selected

Number of features selected: 1

26.663 -1.4 Decimal Degrees

FinalDataset_ControlCounts.mxd - ArcMap - ArcEditor

File Edit View Insert Selection Tools Window Help

1:1,202,996

Georeferencing Layer: Cal4.tif

Editor Task: Cut Polygon Features Target: Layer: elevation90m 3D Analyst Layer: elevation90m

Layers

- zTroopMovements_Buffer200m_SinglePart
- CommuneDeathsDaily
- Rwanda Base 2
- Deaths by Commune
- Troop Movements
- FD-COM-TOTAL
- Rwanda
- Commune_Predicted221
- Old Data
- Calendar
- Troop Control
- Rwanda Base 2
- secteurCopy2
- Rwanda Base
- TroopBase_Dissolve

Attributes of zTroopMovements_Buffer200m_SinglePart

Date	EndDate	Control	Shape	BUFI
10/1/1993	3/8/1994	RPF	Polygon	C
3/8/1994	4/5/1994	RPF	Polygon	C
4/6/1994	4/6/1994	RPF	Polygon	C
4/7/1994	4/11/1994	RPF	Polygon	C
4/12/1994	4/13/1994	RPF	Polygon	C
4/14/1994	4/19/1994	RPF	Polygon	C
4/20/1994	4/20/1994	RPF	Polygon	C
4/21/1994	4/22/1994	RPF	Polygon	C
4/23/1994	4/25/1994	RPF	Polygon	C
4/26/1994	5/4/1994	RPF	Polygon	C
5/5/1994	5/18/1994	RPF	Polygon	C
5/19/1994	5/19/1994	RPF	Polygon	C
5/20/1994	5/24/1994	RPF	Polygon	C
5/25/1994	5/28/1994	RPF	Polygon	C
5/29/1994	5/30/1994	RPF	Polygon	C
5/31/1994	6/8/1994	RPF	Polygon	C
6/8/1994	6/21/1994	RPF	Polygon	C
6/22/1994	6/27/1994	RPF	Polygon	C
6/28/1994	6/30/1994	RPF	Polygon	C
7/1/1994	7/3/1994	RPF	Polygon	C
7/4/1994	7/4/1994	RPF	Polygon	C
7/5/1994	7/14/1994	RPF	Polygon	C
7/15/1994	7/14/1994	French	Polygon	C
7/15/1994	7/17/1994	French	Polygon	C
7/15/1994	7/17/1994	RPF	Polygon	C
7/18/1994	7/18/1994	RPF	Polygon	C
7/18/1994	7/18/1994	French	Polygon	C
7/19/1994	7/19/1994	French	Polygon	C
7/19/1994	7/19/1994	RPF	Polygon	C

Select By Location

Lets you select features from one or more layers based on where they are located in relation to the features in another layer.

I want to:

select features from

the following layer(s):

☐ zTroopMovements_Buffer200m_SinglePart

☒ CommuneDeathsDaily

☒ Only show selectable layers in this list that:

are completely within

the features in this layer:

☒ zTroopMovements_Buffer200m_SinglePart

☒ Use selected features (1 features selected)

☐ Apply a buffer to the features in zTroopMovements_Buffer200m_SinglePart

of: 0.000000 Decimal Degrees

Help OK Apply Close

Communes within RPF Control

Select by location dialog

Field Calculator

Fields:

OBJECTID

FD_Deaths_commun

FD_Deaths_comname

FD_Deaths_preffum

FD_Deaths_preffname

FD_Deaths_day

FD_Deaths_datenum

FD_Deaths_kill_lower

FD_Deaths_kill_media

FD_Deaths_kill_upper

Communes_COMMUNES_I

Communes_NAME1

Type:

☒ Number

☐ String

☐ Date

Functions:

Abs ()

Atn ()

Cos ()

Exp ()

Fx ()

Int ()

Log ()

Sin ()

Sqr ()

RPF =

[FD_Deaths_kill_upper]

☒ Calculate selected records only

Load... Save... Help OK Cancel

Attributes of CommuneDeathsDaily

FD_Deaths_preffum	FD_Deaths_preffname	FD_Deaths_day	FD_Deaths_datenum	FD_Deaths	FD_Deaths_kill	FD_Deaths_kill_upper	Communes_Shape	Communes_COMMUNES_I	Communes_NAME1
1	Butare	4/22/1994	12530	53	1562	27630	Polygon	18	Ruhak
1	Butare	4/22/1994	12530	52	1485	26840	Polygon	32	Huye
9	Gikongoro	4/21/1994	12529	45	1208	18030	Polygon	38	Karan
1	Butare	4/22/1994	12530	33	1000	17210	Polygon	1	Shyar
1	Butare	4/22/1994	12530	26	733	13000	Polygon	86	Muyire
1	Butare	4/22/1994	12530	32	833	12690	Polygon	27	Isiro
1	Butare	4/21/1994	12529	23	639	11260	Polygon	30	Muyire
1	Butare	4/21/1994	12529	4	332	10180	Polygon	46	Nyabi
1	Butare	4/21/1994	12529	13	206	9447	Polygon	22	Runyir
6	Gitarama	4/21/1994	12529	10	216	3860	Polygon	37	Masar
6	Gitarama	4/22/1994	12530	2	125	3694	Polygon	45	Kigom
8	Kibungo	4/21/1994	12529	4	58	1109	Polygon	107	Bireng
8	Kibungo	4/22/1994	12530	4	58	1055	Polygon	107	Bireng
6	Gitarama	4/22/1994	12530	1	10	764	Polygon	49	Tambwe
2	Ruhengeri	4/22/1994	12530	1	1	531	Polygon	128	Butaro
6	Gitarama	4/21/1994	12529	1	2	429	Polygon	96	Ntongwe
11	Cvannuini	4/21/1994	12529	2	22	415	Polygon	0	Gisuma

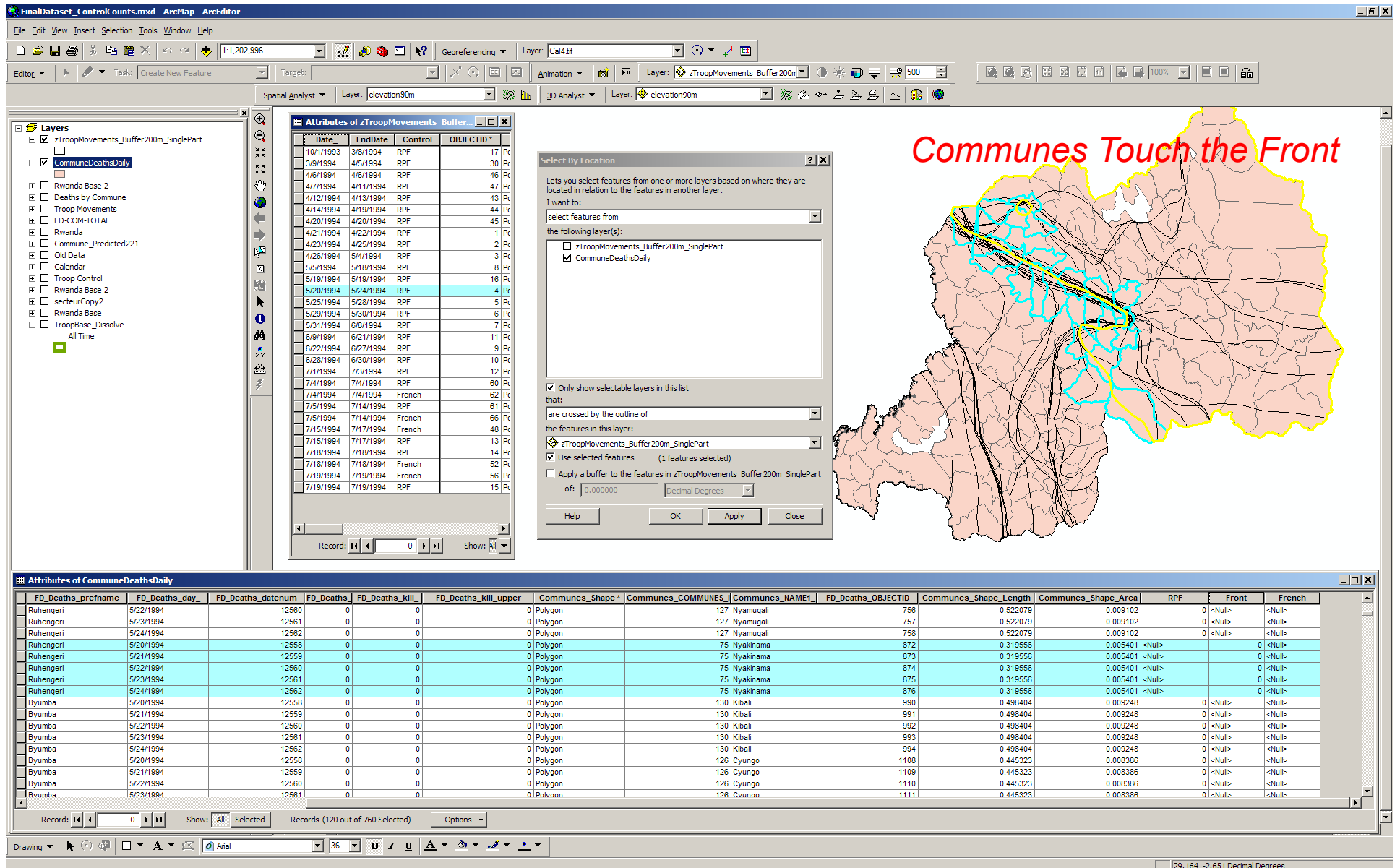
Records: 0 Show: All Selected Records (96 out of 304 Selected) Options

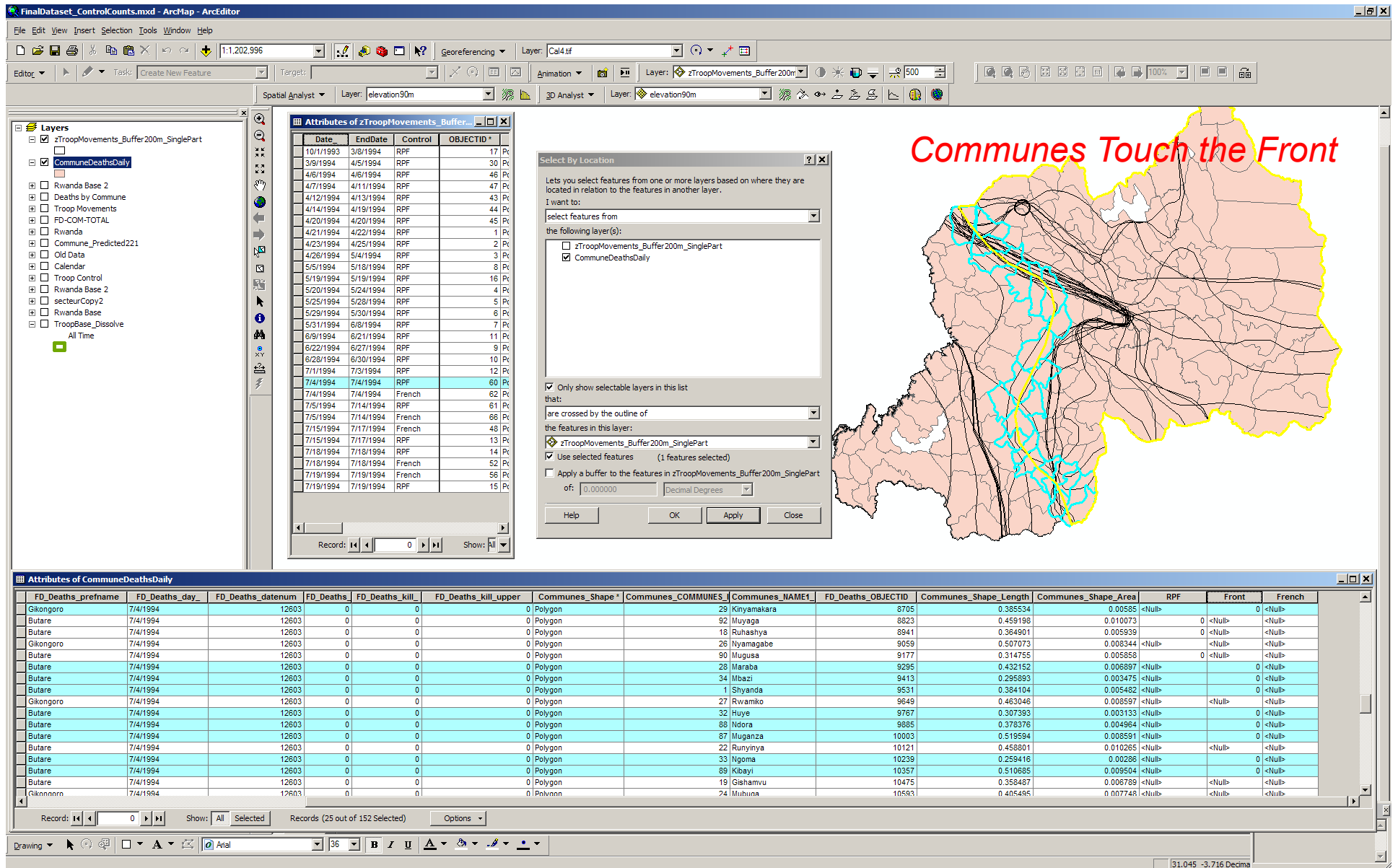
Drawing Anal 36 B I U A 30.47 -2.871 Decimal Degrees

Copy Upper Death Value to RPF Field

Calculation of FRONT Deaths:

1. Select Initial Date Range for Troop Control Area
2. Use a Definition Query to select only those dates from the total daily death by commune layer
3. Use the Select by Location to select the communes whose boundaries “are crossed by the outline of” the RPF control area
4. Credit FRONT for the deaths by copying the upper death values into a newly added FRONT column in the Daily Commune Death Attribute Table
5. Select next Date Range for Troop Control Area and repeat....





Calculation of FAR Deaths:

1. Select Initial Date Range for Troop Control Area
2. Use a Definition Query to select only those dates from the total daily death by commune layer
3. Use the Select by Location to select the communes whose boundaries “intersect” (meaning touch in anyway) the RPF control area
4. Select the opposite Communes
5. Credit FAR for the deaths by copying the upper death values into a newly added FAR column in the Daily Commune Death Attribute Table
6. Select next Date Range for Troop Control Area and repeat....

Control Deaths and Front Deaths were also calculated for the French Army

