Socioeconomic Components of Little Bear River CEAP Project

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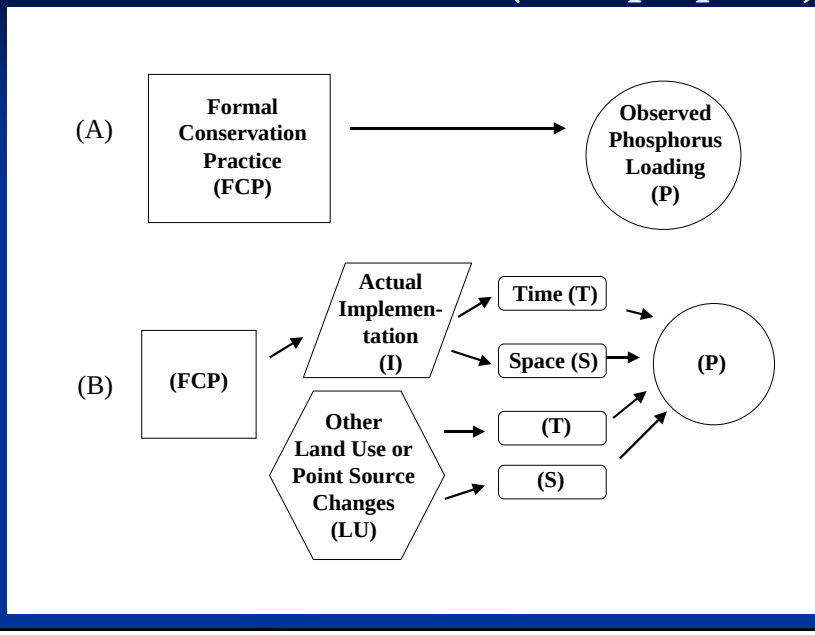
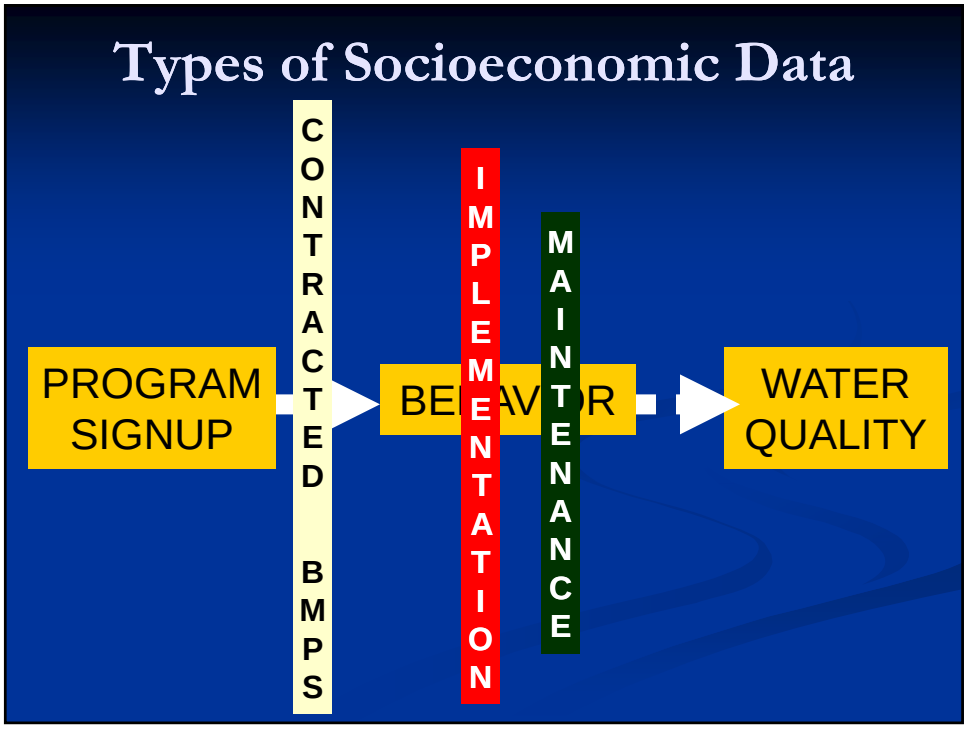
General USU Model *(from proposal)*





Socioeconomic Efforts

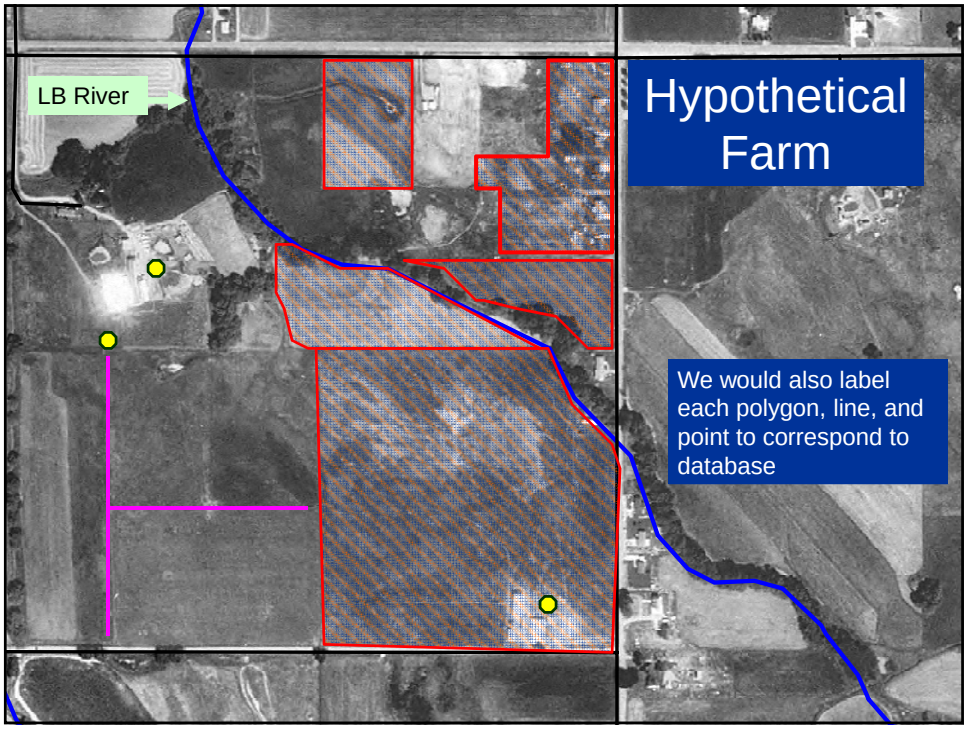
- **Gather formal practice info** from NRCS files
  - Locate in time & space
  - Code attributes
- **Conduct field interviews** with participants
  - Validate file information
  - Learn about experience
    - Before, during & after participation in LBR projects

NRCS File Information

- Worked in county USDA/NRCS office (~ 9 months)
- Went through every file associated with Little Bear River Watershed project – **90 landowners**
- Observations
  - Challenge to create master list of practices (**919 total**)
  - Variability in quality & content of files
  - Ambiguities often clarified by NRCS staff
- Copied key maps for interviews
- Summarized information on spreadsheet
  - There were 65 practice types

Database of File Information

Prop ID	GIS Ref. #	GIS type	Practice Code	Applied Units	Practice Units	Intended End Date	Structure or Event Certified Complete	Mgmt start date (spring of this year)	Mgmt end date (fall of this year)	Notes
1	1-A1	polygon	312	1	plan	Oct-96	10/21/96	NA	NA	a plan to put in the facilities and store when speading is not feasible
1	1-B1	point	313	1	structures	Oct-95	10/16/95	NA	NA	solid and liquid storage facilities
1	1-B1	point	313	1	structure		10/16/95	NA	NA	
1	1-C1	point	313	1	structure	Oct-95	12/05/95	NA	NA	animal holding areas/stalls as a manure containment method
1	1-A2	polygon	382	1750	feet of fence	Dec-95	12/4/1995	NA	NA	all the way around a pasture but it protects Hyrum Slough to the East
1	1-D1	line	382	350	feet of fence	Dec-95	12/4/1995	NA	NA	along Hyrum Slough to prevent cattle in stream and erosion. Jay thinks this may not have happened and actually they convinced him to abandon this area
1	1-E1	polygon	645	62.3	acres	NA	NA	Jan-95	09/26/95	wildlife habitat
1	1-F1	polygons	645	116.3	acres	NA	NA	Jan-96	11/08/96	wildlife habitat
2	NONE	NONE	312	1	nagement System	09/01/00	09/20/00	NA	NA	Waste storage facility was constructed properly.
2	2-A2	point	313	1	e Storage Facitlity	09/01/00	09/20/00	NA	NA	see comment
2	2-B1	polygon	449	36	acres	NA	NA	Jun-96	09/29/97	Irrigation water management- irrigate to meet peak demand of the crop. Specifics were given: Alfalfa- 9 days, Small grain- 12 days, Corn- 16 days.
2	2-C1	polygon	449	479	acres	NA	NA	Jun-95	09/29/97	Irrigation water management- irrigate to meet peak demand of the crop. Specifics were given: Alfalfa- 9 days, Small grain- 12 days, Corn- 16 days.
2	2-B2	polygon	510	36	acres	NA	NA	May-96	09/29/97	Pasture and Hayland Mgmt.
2	2-C2	polygon	510	479	acres	NA	NA	May-95	09/29/97	Pasture and Hayland Mgmt.
2	2-B3	polygon	633	36	acres	NA	NA	Jan-96	09/29/97	Waste utilization
2	2-C3	polygon	633	479	acres	NA	NA	Jan-95	09/29/97	Waste utilization
2	2-A1	point	634	1	e Transfer System	09/01/00	09/20/00	NA	NA	Liquid waste pump
2	2-D1	polygon	645	94	acres	NA	NA	Jan-95	09/27/95	Upland Wildlife Magmt- Wildlife secondary concern. Maintained vegetation along roadways and fences for wildlife cover and feed.
2	2-E1	polygon	645	96	acres	NA	NA	Jan-95	09/29/97	Upland Wildlife Magmt- Wildlife secondary concern. Maintained vegetation along roadways and fences for wildlife cover and feed.
2	NONE	NONE	991	479	acres	NA	NA	Jan-95	09/29/97	Record Keeping- Attended a training course to learn how to keep records properly.
3	3-B3	line	322	0.2	acres	9/1/2001	04/07/02	NA	NA	at intersection of 3 fields
3	3-A1	line	382	1453	feet of fence	9/1/2001	05/15/01	NA	NA	cross fencing
3	3-B1	line	382	4500	feet of fence	9/1/2000	04/07/02	NA	NA	drainpipe from water control structures
3	3-F1	line	430	40	feet of pipe	9/1/2000	08/16/00	NA	NA	structure for water control
3	3-H2	polygon	449	9.8	acres	NA	NA	Jun-96	10/22/96	channel vegetation
3	3-H1	polygon	464	9.8	acres	9/1/1996	10/22/96	NA	NA	riparian fencing



Interview Methods

- Advance letter sent
- Phone contact made to set up interview
- USDA/USU Confidentiality Agreement requires Informed Consent Form to be signed
- Face to face interviews conducted in field
- Status of Interviews
  - 90 sent letters
  - 72 contacted by phone
    - 18 unreachable (10 moved/no contact; 5 dead/senile)
  - 55 interviews completed (15 refused; 2 other)
    - 76% of those contacted; 61% of original 90 participants

Interview Content

- Review maps & list of file practices
- For each major cluster of practices
  - What exactly was done?
  - Why select this practice?
  - What was it supposed to accomplish?
  - How easy or difficult was it to implement?
  - Did it work like expected?
  - Did it require major changes in the rest of operation?
  - Costs and benefits associated with the practice?
  - Were you able to continue using this practice (after the original contract ran out)?
  - Any changes made to the practice?
  - Is practice still being maintained? Is it still there?

More Interview Content

- Explore how respondent got involved in the Little Bear Watershed project in the first place
- List of other things done on land that might impact water quality in the Little Bear River
- Information about farm operation
- Personal characteristics & plans for future
- Interviews generally took ~90 minutes

Created Revised Practice Database

- Incorporated information from interviews
- Several key modifications
  - Implementation information
    - Some practices not implemented fully
    - Some actual practices differed from 'file view'
    - New practices (not NRCS work) likely to affect WQ
  - Current Status
    - Dates for start
    - Still there? Still Used?
  - Estimated water quality impacts (if any)

Pre- & Post-Interview Datasets

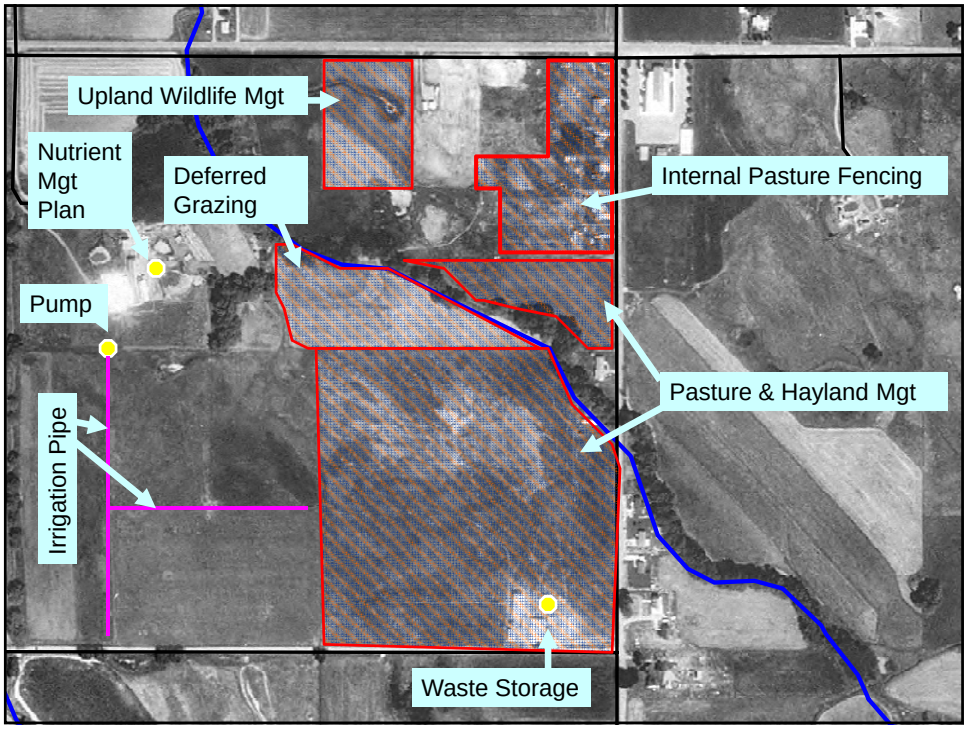
- Pre-Interview
  - 90 farms/landowners
  - 917 practices
- Post-Interview
  - 55 farms/landowners
  - 625 practices
    - 552 Official CEAP practices
    - 73 'new' practices discovered in field

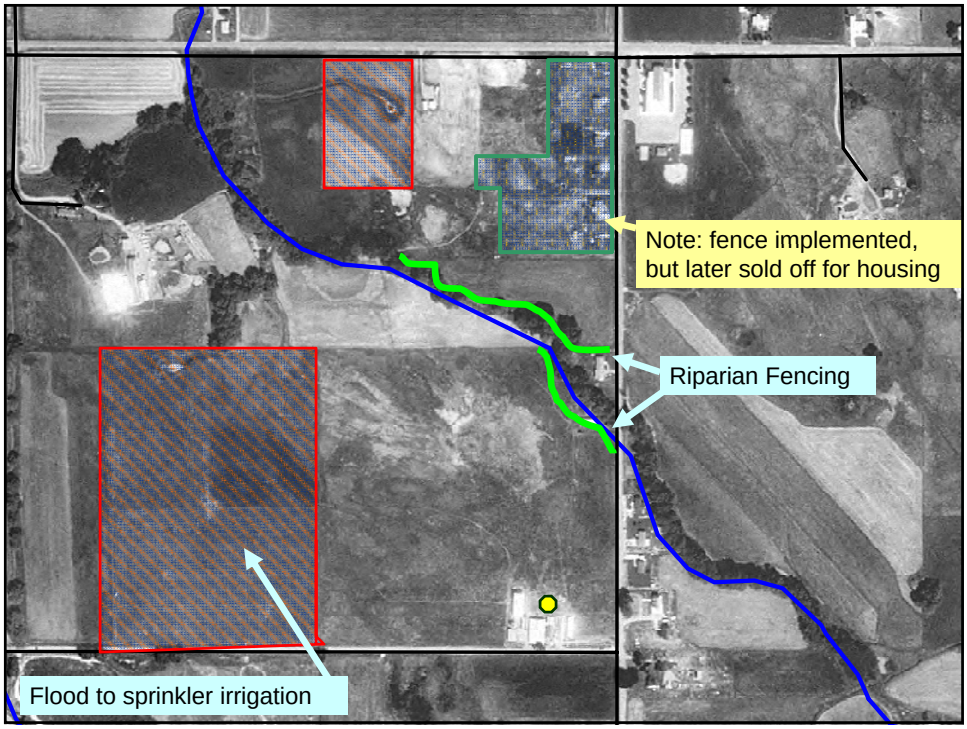
Post-Interview Analysis

- After each interview, in-depth qualitative narratives are typed
- Themes were given quantitative codes and placed into a spreadsheet (always done with other interviewer present)
- Themes identified both inductively and deductively
  - 'Status' themes—mostly deductive
  - 'Why' themes—mostly inductive

Impacts of Fieldwork

- Accuracy critical for successful CEAP modeling
- Interviews clarified
  - **Implementation**
    - Allows us to focus on practices that were associated with actual changes in behaviors
  - **Spatial Location**:
    - Frequently changed GIS maps
    - Polygons ➔ lines or points; Subset of polygons
  - **Temporal Information**
    - Actual start, end dates
  - Possible 'weights' for WQ impact assessment


Upland Wildlife Mgt
Nutrient Mgt Plan
Deferred Grazing
Internal Pasture Fencing
Pump
Pasture & Hayland Mgt
Irrigation Pipe
Waste Storage


Note: fence implemented, but later sold off for housing
Riparian Fencing
Flood to sprinkler irrigation

Conclusions

- Formal USDA Program files are imperfect guide to actual BMP implementation & maintenance
- Fieldwork can generate important insights into water-quality relevant behaviors
  - More accurate behavioral component of models
  - Understanding barriers to implementation & maintenance
- Face to Face Contact = particularly useful
  - Takes time & money