

# THE CONSERVATION RESERVE PROGRAM

A Look into the Cost and Benefits

By Colleen M. Buck

# History

- ▣ Food Security Act of 1985 signed by President Ronald Reagan
- ▣ Pays rental payments to producers for retiring land
- ▣ CRP is divided up into three regions
  - Northern Plains
    - ▣ Montana, North Dakota, South Dakota
  - Southern Plains
    - ▣ Colorado, Kansas, New Mexico, Oklahoma, Texas
  - Southwest Corn Belt
    - ▣ Iowa, Illinois, Missouri, Wisconsin

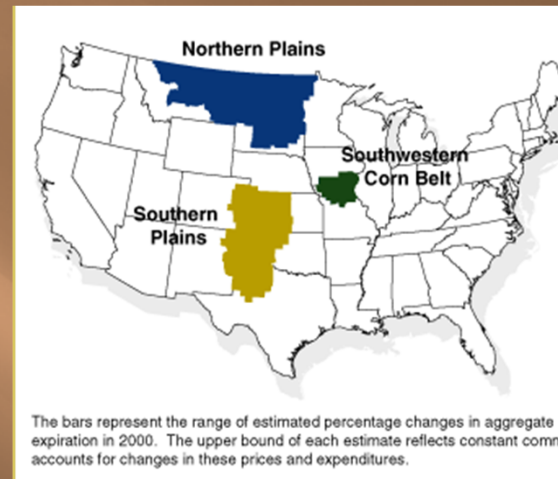
# Thesis

- ▣ What are the environmental and economical costs and benefits of putting land into CRP for Montana producers?



# Overview

- ▣ Sign-ups
  - General
  - Continuous
- ▣ Contracts
  - 10-15 years
- ▣ Rental Payments
  - Follow commodity prices
- ▣ Increased Commodity Prices
  - Early withdrawals from contracts





# Definitions

- ▣ Eligible Producers- “owned and operated land for at least twelve months.”
- ▣ Eligible Land- “must be cropland that is planted or considered planted to an agriculture commodity four of the previous six crop years...and is physically and legally capable of being planted in a normal manner to an agriculture commodity.”
- ▣ Agriculture Commodity- “any crop planted and produced by annual tilling of the soil...”

# Definitions Continued

- ▣ Annual Rental Payment- “the annual payment specified in the CRP contract that is made to a participant to compensate a participant for placing eligible land in the CRP.”
- ▣ Cost-Share Payments- “the payments made by the CCC to assist program participants in establishing the practices required in a contract.”
- ▣ Payment Period- “the 10-15 year contract period for which the participant receives an annual rental payment.”

# Enrollment Considerations

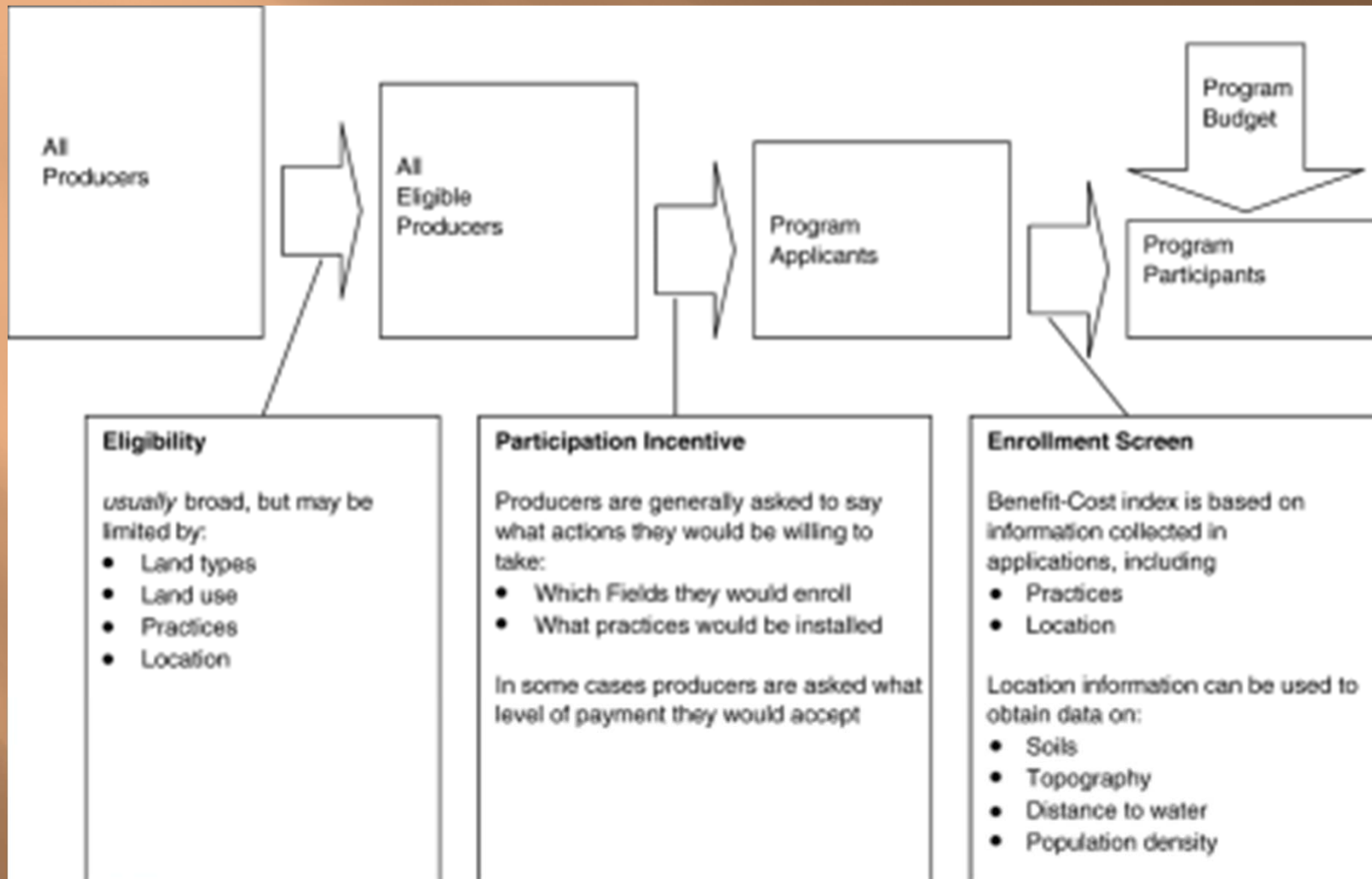
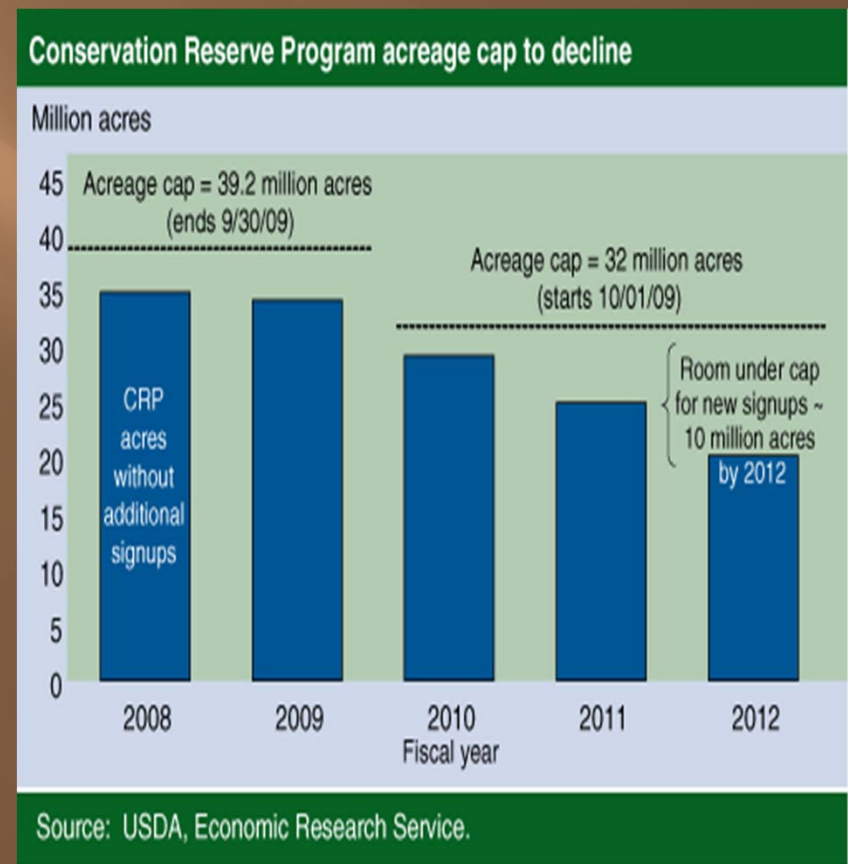


Figure From: Claassen, R., Cattaneo, A., & Johansson, R. (2008). Cost-Effective Design of Agri-Environmental Payment Programs: U.S. Experience in Theory and Practice. *Ecological Economics*, 65(4), 737-752. doi: 10.1016/j.ecolecon.2007.07.032. Retrieved November 21, 2010, from EBSCOhost.

# Potential Problems

- ▣ Increasing Commodity Prices
- ▣ Reduced Acreage Capacity
  - 32 million acres
  - 4.6 million less than 2007
  - New Sign-Ups by 2012





# Environmental Benefits

- ▣ Improved Soil Fertility
- ▣ Reduced Erosion
  - 450 million tons per year
- ▣ Improved Water Quality
- ▣ Wildlife Habitat
- ▣ Increased Wildlife
  - Sage Grouse, Deer, Pheasants
- ▣ Revenues from hunting
  - North Dakota Study
    - ▣ \$12.8 million annually
    - ▣ \$9.45/acre



# Costs

- ▣ Opportunity
  - Production
  - Rental
- ▣ Improvement
  - Government assistance
- ▣ Production
  - After 10-15 years



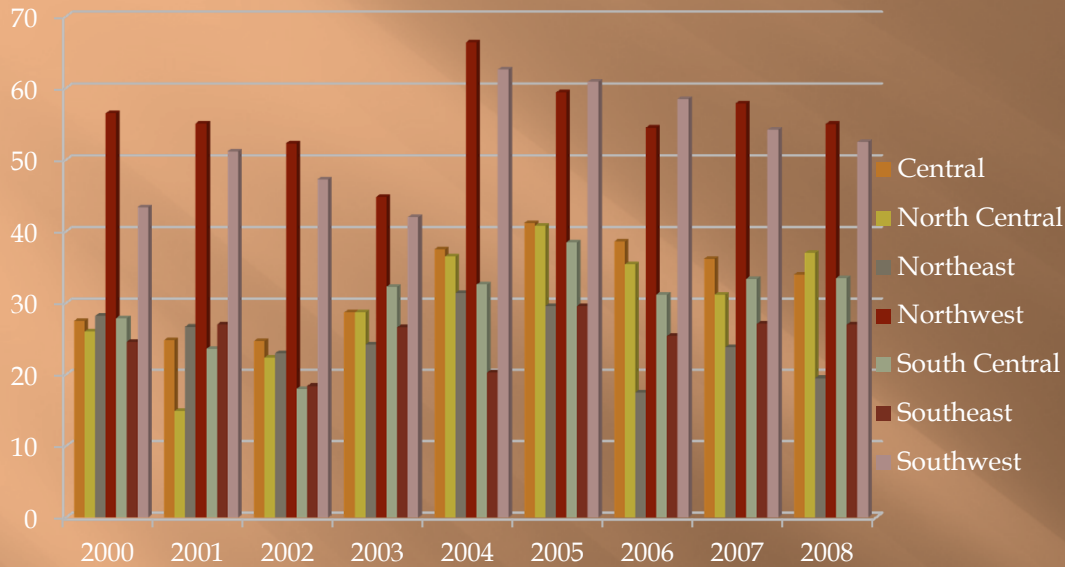
# Montana Situation

- ▣ 3 million acres in CRP
  - Grassland
  - Wetlands
  - Other Habitats
- ▣ 6,247 Farms
- ▣ 60.9 million acres in production
  - 29,800 farms
  - 2040 acres
- ▣ Seven regions

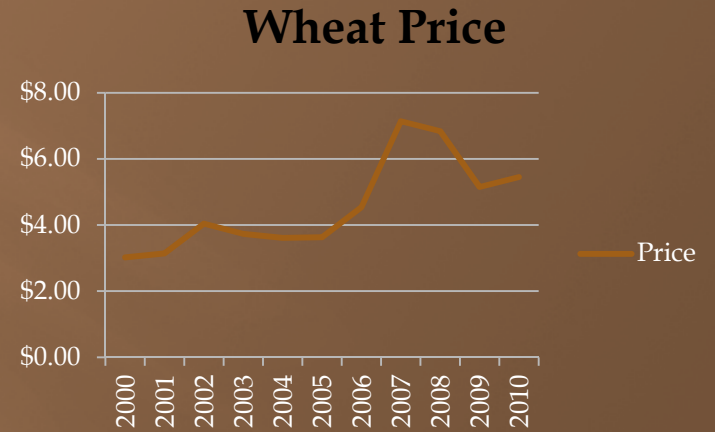




# Montana Situation Continued

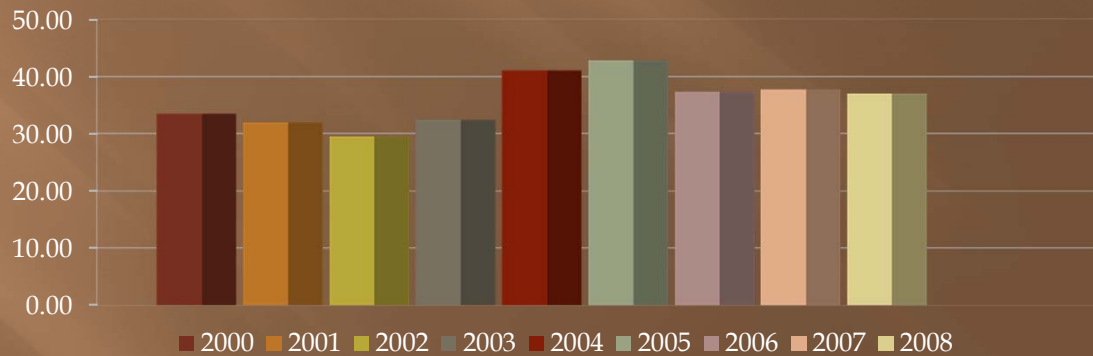
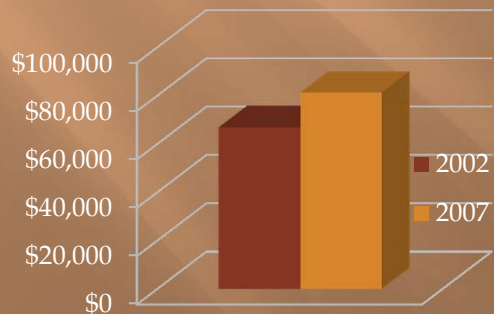


Wheat Yield Measured in Bu/Acre



Montana Average Wheat Bushels/Acre

## Expenses



Data from USDA Statistics Site



# Hypothetical Situation

- ▣ Two sections of land (1280 acres)
  - Average producing land
  - Poor producing land
- ▣ Three potential scenarios
  - Plant all 1280 acres wheat
  - Retire all 1280 acres
  - Plant 640 acres of wheat and retire 640 acres
- ▣ Data from 2000-2010

# Formulas / Methods

- ▣ Wheat Production
  - $\text{Average Bu/acre} * \text{acres} * \text{Price/Bu}$
- ▣ Revenues from wheat production
  - $\text{Wheat Production} - \text{Expenses (operating costs)}$
- ▣ CRP Revenues
  - $\text{Acres} * \text{Rental Payment/acre}$
- ▣ Data was entered into these formulas and the results were analyzed to draw conclusions

# Results

Year	Bu/Acre	Price/Bu	RP/Acre	Acre	Wheat Production	Expenses	Revenues	CRP Payment
2002	17	\$4.04	\$30.14	640	\$43,955.20	\$66,814	-\$22,858.80	\$19,289.60
	29.44	4.04	30.14	640	\$76,120.06	\$66,816	\$9,304.06	\$19,289.60
	29.44	\$4.04	\$30.14	1280	\$152,240.13	\$66,814	\$85,426.13	\$38,579.20
2007	17	\$7.14	\$33.62	640	\$77,683.20	\$81,277	-\$3,593.80	\$21,516.80
	37.69	\$7.14	\$33.62	640	\$172,228.22	\$81,277	\$90,951.22	\$21,516.80
	37.69	\$7.14	\$33.62	1280	\$344,456.45	\$81,277	\$263,179.45	\$43,033.60
2010	17	\$4.87	\$27.72	640	\$52,985.60	\$82,659	-\$29,673.40	\$17,740.80
	36	\$4.87	\$27.72	640	\$112,204.80	\$82,659	\$29,545.80	\$17,740.80
	36	\$4.87	\$27.72	1280	\$224,409.60	\$82,659	\$141,750.60	\$35,481.60

# Results in 2007 GDP \$'s

- ▣ Index Numbers: 2002- 92.28, 2007- 106.71
- ▣ Change in price levels:  $(106.71-92.28)/92.28$ 
  - .1564 or 15.64%
- ▣  $1.1564 * \$66,814 = \$77,262$
- ▣ Calculation done with all 2002 numbers

Year	Bu/Acre	Price/Bu	RP/Acre	Acre	Wheat Production	Expenses	Revenues	CRP Payment
2002	17	\$4.67	\$34.85	640	\$50,829.79	\$77,264	-\$26,433.92	\$22,306.49
	29.44	\$4.67	\$34.85	640	\$88,025.24	\$77,264	\$10,761.53	\$22,306.49
	29.44	\$4.67	\$34.85	1280	\$176,050.48	\$77,264	\$98,786.77	\$44,612.99
2007	17	\$7.14	\$33.62	640	\$77,683.20	\$81,277	-\$3,593.80	\$21,516.80
	37.69	\$7.14	\$33.62	640	\$172,228.22	\$81,277	\$90,951.22	\$21,516.80
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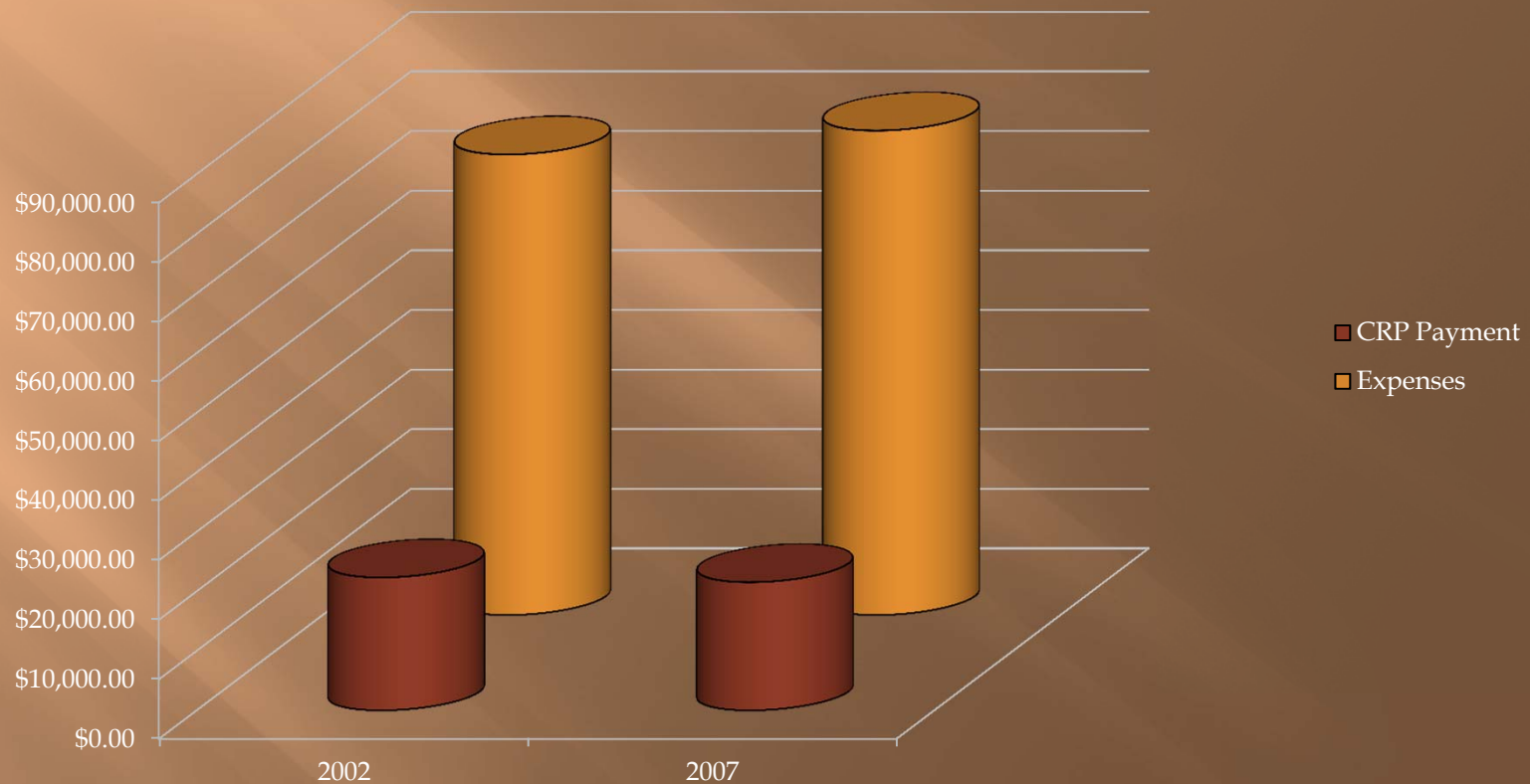


# Conclusions

- ❑ CRP is economically beneficial with poor producing land
- ❑ Average producing land will generate a profit
- ❑ A portion of land in CRP will reduce production costs for average producing land
- ❑ Even though CRP acreage is being reduced the environmental and economic benefits far outweigh the economic costs

# CRP Payment Compared to Expenses

CRP Payment Compared to Expenses



- CRP percentage of Expenses
  - 2002- 28.87%
  - 2007- 26.47%

# Recommendations

- ▣ The CRP can be a very beneficial program to be involved with provided the opportunity costs are minimized and profit is maximized
- ▣ The format for the program is consistent but the payments are not
- ▣ Each region and state has its own payments and prices
- ▣ Look into CRP in your state to assess the benefits/costs

# Research Limitations

- ▣ Finding expenses
- ▣ Monetary value for environmental benefits





# Summary

- ▣ History
- ▣ Thesis
  - What are the environmental and economical costs and benefits of putting land into CRP for Montana producers?
- ▣ Overview of CRP
- ▣ Problems
- ▣ Environmental Benefits
- ▣ Costs
- ▣ Montana
- ▣ Results
- ▣ Conclusion



# Bibliography

- Bangsund, D., Hodur, N., & Larry Leistritz, F. (2004). Agriculture and Recreational Impacts of the Conservation Reserve Program in Rural North Dakota, USA. *Journal of Environmental Management*, 71(4), 293. doi:10.1016/j.jenvman.2003.12.017. Retrieved November 21, 2010, from EBSCOhost.
- Farm Bill 2008. Subchapter B- Loans, Purchases, and Other Operations. *68FR24835*, May 8, 2003.
- Hilton, John. (2010). County-Level Cash Rent Data. *NASS*. Montana Department of Agriculture. Retrieved February 6, 2011, from [www.usda.gov](http://www.usda.gov).
- Lester, Teresa. (2006). Conservation Reserve Program: Enrollment Statistics and Program Summary, 2005 Fiscal Year. *Farm Service Agency*. Retrieved February 7, 2011, from [http://www.fsa.usda.gov/dafp/cepd/crp\\_statistics.htm](http://www.fsa.usda.gov/dafp/cepd/crp_statistics.htm)
- Lester, Teresa. (2007). Conservation Reserve Program: Enrollment Statistics and Program Summary, 2006 Fiscal Year. *Farm Service Agency*. Retrieved February 7, 2011, from [http://www.fsa.usda.gov/dafp/cepd/crp\\_statistics.htm](http://www.fsa.usda.gov/dafp/cepd/crp_statistics.htm)
- National Monthly Average Market Prices, *Table 1*. Retrieved January 29, 2011, from [www.usda.gov/fsa](http://www.usda.gov/fsa).
- Smith, Dave. (2010). Goodbye CRP. *Montana Outdoors*. Montana Fish, Wildlife and Parks. pg. 28-31, November-December 2010.
- USDA. Statistics, Crops. Retrieved February 6, 2011, from [http://www.nass.usda.gov/Statistics\\_by\\_Subject/index.php?sector=CROPS](http://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS)





# Questions?

