



**United States  
Department of  
Agriculture**

**Risk  
Management  
Agency**

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**Federal Crop Insurance:  
A Time for Change  
RMA Administrator Bill Murphy**

**2011 Crop Insurance Industry Convention  
Indian Wells, CA  
February 9, 2011**





# NCIS Annual Meeting

## February 9, 2011

- **Crop Insurance By The Numbers**
- **Rating Methodology Study**
- **A Time for Change**



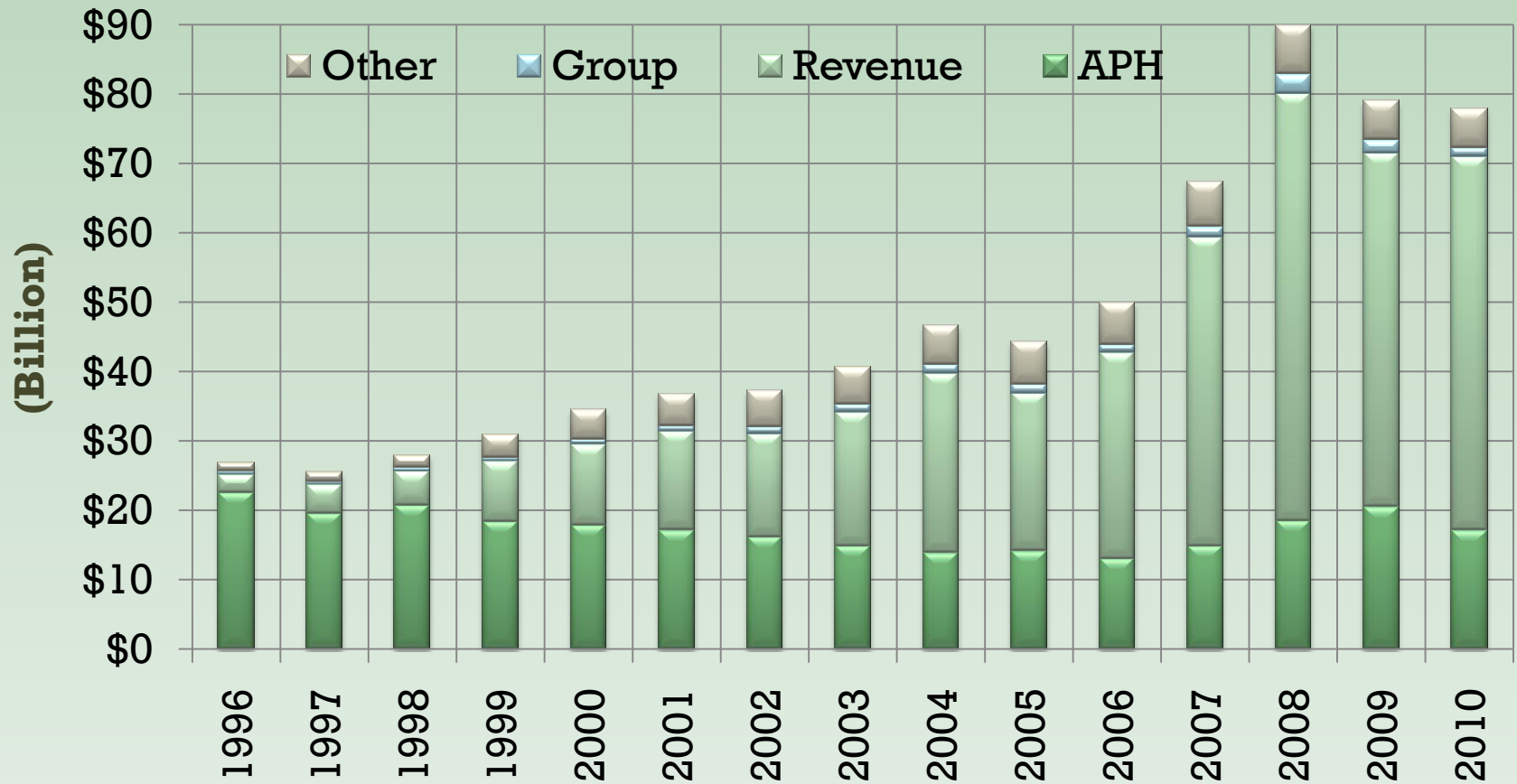
# 2010 National Business Summary: Federal Crop Insurance Program

<b>Liability</b>	<b>\$78 Billion</b>
<b>Acres Insured</b>	<b>256 Million</b>
<b>Total Premium</b>	<b>\$7.6 Billion</b>
<b>Indemnity (Claims Paid So Far)</b>	<b>\$3.6 Billion</b>
<b>Loss Ratio CY 2009</b>	<b>.47</b>



# Program Growth: Liability by Insurance Plan

## Liability by Plan Type



**Liability by Plan Type (billion dollars)**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>APH</b>	22.56	19.54	20.78	18.42	17.94	17.15	16.13	14.90	13.86	14.17	12.99	14.86	18.55	20.45	17.19
<b>Revenue</b>	2.58	4.19	4.86	8.66	11.53	14.22	14.87	19.18	25.85	22.65	29.82	44.53	61.59	51.01	53.80
<b>Group</b>	0.52	0.41	0.55	0.52	0.82	0.81	0.99	1.14	1.27	1.35	1.05	1.47	2.80	1.92	1.29
<b>Other</b>	1.21	1.31	1.74	3.34	4.16	4.55	5.30	5.40	5.64	6.11	6.03	6.48	6.96	5.59	5.65



# Program Growth: Participation By Crop

## 2010 Crop Ranking by Value

*(as of Jan. 11, 2011)*

Crop	Crop Liability (\$ Mil.)	Percent of Total
Corn	\$31,661	40.6%
Soybeans	\$17,957	23%
Wheat	\$6,416	8.2%
Cotton	\$2,852	3.7%
Nursery (FG&C)	\$2,795	3.6%
Citrus	\$2,124	2.7%
Rice	\$1,221	1.6%
Potatoes	\$959	1.2%
All Others	\$11,947	15.3%
<b>Total</b>	<b>\$77,932</b>	<b>100.0%</b>



## Ongoing Efforts: Rating Methodology Review

# Rating Methodology Review

- RMA's general approach to premium rating is appropriate
  - Consistent with actuarial principles
- Review posted on RMA's Website
- RMA's rating methodology, and supporting documentation also available

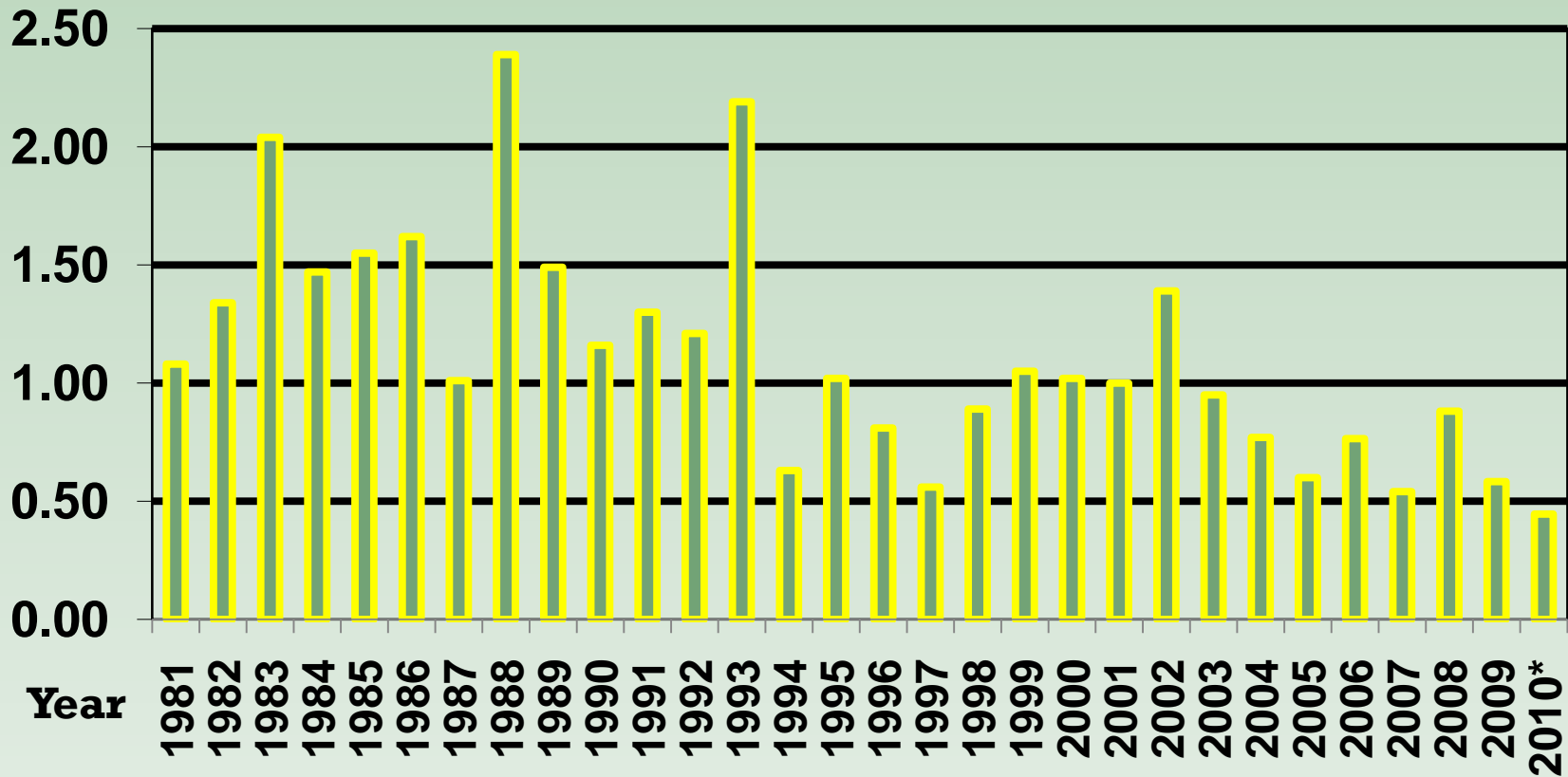


## Rating Methodology Review

- Review of Historical Loss Experience
  - Adjust to reflect current T/P mix
  - Adjust to reflect units
  - Alternative weighting of years
    - Based on weather data
- Work Underway by Contractor – Sumaria



# FCIC Loss Experience, 1981-2010



\*As of January 10, 2011

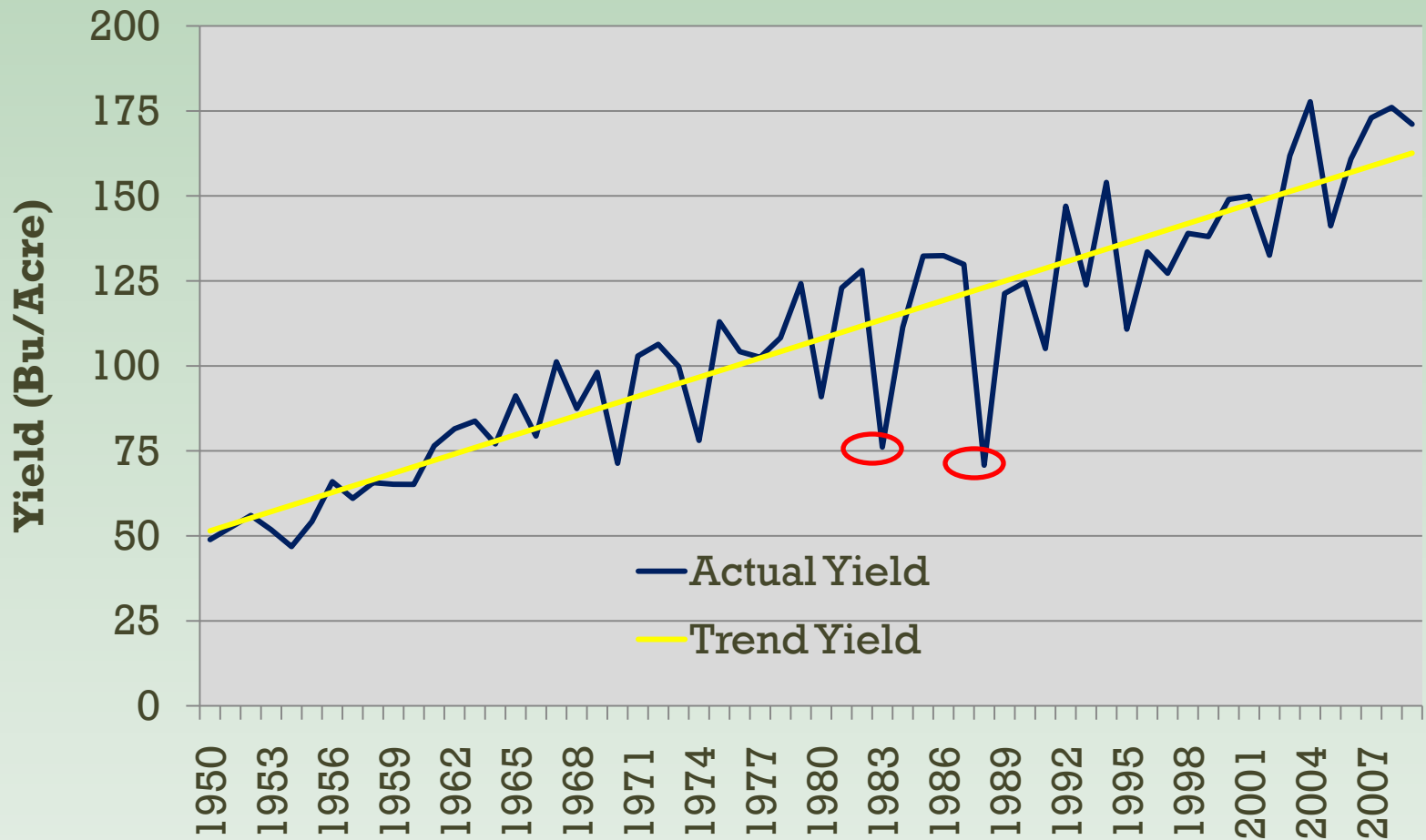
## FCIC Loss Experience

Year	Loss Ratio
1981	1.08
1982	1.34
1983	2.04
1984	1.47
1985	1.55
1986	1.62
1987	1.01
1988	2.39
1989	1.49
1990	1.16
1991	1.3
1992	1.21
1993	2.19
1994	0.63
1995	1.02
1996	0.81
1997	0.56
1998	0.89
1999	1.05
2000	1.02
2001	1
2002	1.39
2003	0.95
2004	0.77
2005	0.6
2006	0.77
2007	0.54
2008	0.88
2009	0.58
2010*	0.45

\*As of January 10, 2011.



## Illinois Corn Yield



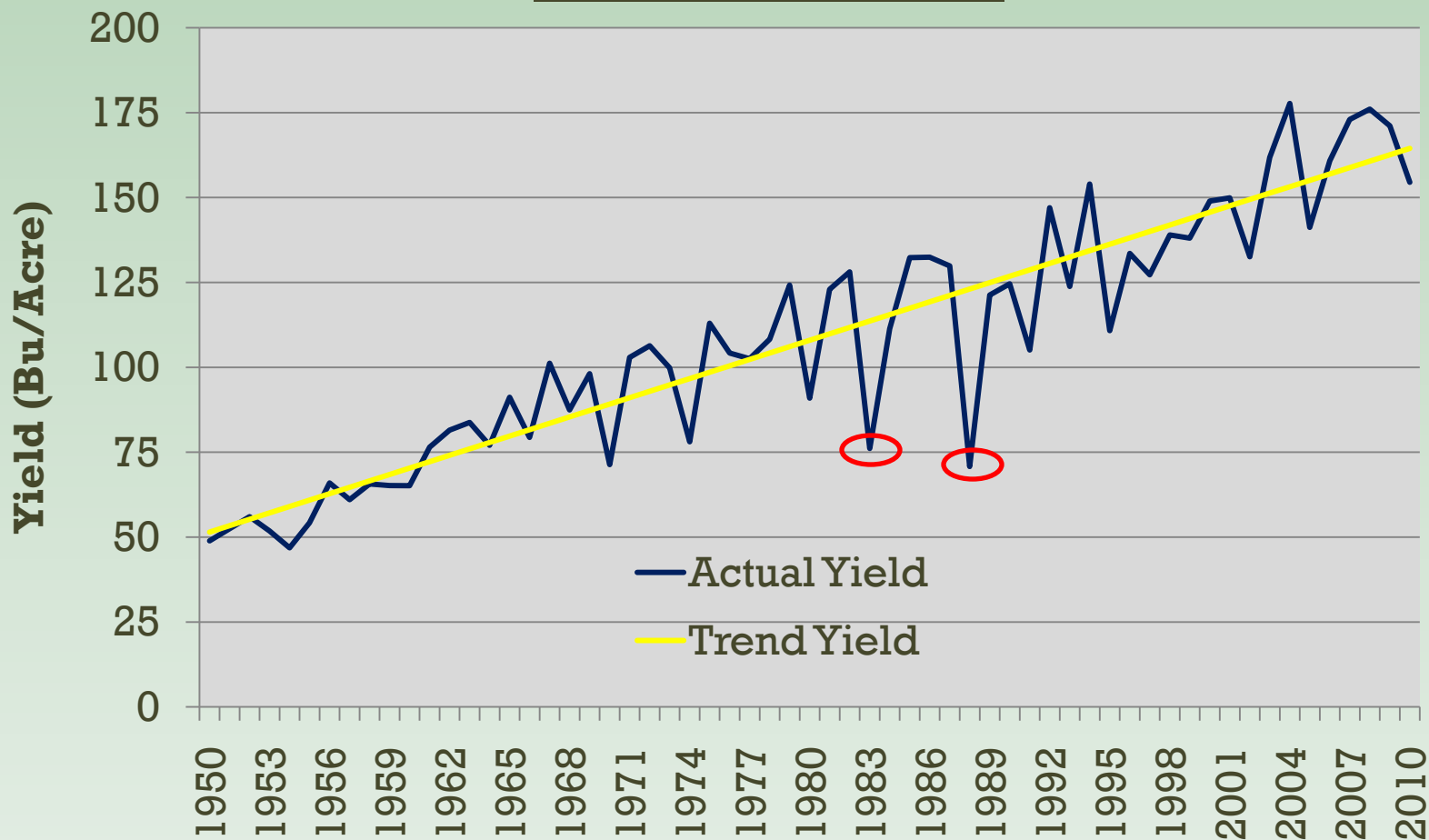
## Illinois Corn Yield (bushels per acre)

Year	Actual Yield	Trend Yield	Year	Actual Yield	Trend Yield
1950	48.9	51.5	1983	76.1	113.6
1951	52.5	53.4	1984	111.4	115.5
1952	56.0	55.3	1985	132.3	117.4
1953	51.8	57.1	1986	132.5	119.3
1954	46.8	59.0	1987	129.9	121.2
1955	54.2	60.9	1988	70.8	123.1
1956	66.0	62.8	1989	121.3	124.9
1957	61.0	64.7	1990	124.6	126.8
1958	65.7	66.6	1991	105.1	128.7
1959	65.2	68.4	1992	147.0	130.6
1960	65.1	70.3	1993	123.8	132.5
1961	76.5	72.2	1994	154.0	134.4
1962	81.5	74.1	1995	110.8	136.2
1963	83.8	76.0	1996	133.5	138.1
1964	77.0	77.9	1997	127.3	140.0
1965	91.2	79.7	1998	139.0	141.9
1966	79.4	81.6	1999	138.1	143.8
1967	101.2	83.5	2000	149.0	145.7
1968	87.5	85.4	2001	149.9	147.5
1969	98.1	87.3	2002	132.6	149.4
1970	71.3	89.2	2003	161.8	151.3
1971	102.9	91.0	2004	177.7	153.2
1972	106.4	92.9	2005	141.2	155.1
1973	99.9	94.8	2006	160.8	157.0
1974	78.1	96.7	2007	173.0	158.8
1975	113.0	98.6	2008	176.0	160.7
1976	104.2	100.5	2009	171.1	162.6
1977	102.5	102.3	2010	154.5	164.5
1978	108.3	104.2			
1979	124.2	106.1			
1980	90.9	108.0			
1981	123.0	109.9			



# Ongoing Efforts: Rating Methodology

## Illinois Corn Yield



**Ongoing Effects: Illinois Corn  
Yield Rating Methodology**

(yield – bushels per acre)

Year	Actual Yield	Trend Yield
1950	48.9	51.5
1951	52.5	53.4
1952	56.0	55.3
1953	51.8	57.1
1954	46.8	59.0
1955	54.2	60.9
1956	66.0	62.8
1957	61.0	64.7
1958	65.7	66.6
1959	65.2	68.4
1960	65.1	70.3
1961	76.5	72.2
1962	81.5	74.1
1963	83.8	76.0
1964	77.0	77.9
1965	91.2	79.7
1966	79.4	81.6
1967	101.2	83.5
1968	87.5	85.4
1969	98.1	87.3
1970	71.3	89.2
1971	102.9	91.0
1972	106.4	92.9
1973	99.9	94.8

Year	Actual Yield	Trend Yield
1975	113.0	98.6
1976	104.2	100.5
1977	102.5	102.3
1978	108.3	104.2
1979	124.2	106.1
1980	90.9	108.0
1981	123.0	109.9
1982	128.1	111.8
1983	76.1	113.6
1984	111.4	115.5
1985	132.3	117.4
1986	132.5	119.3
1987	129.9	121.2
1988	70.8	123.1
1989	121.3	124.9
1990	124.6	126.8
1991	105.1	128.7
1992	147.0	130.6
1993	123.8	132.5
1994	154.0	134.4
1995	110.8	136.2
1996	133.5	138.1
1997	127.3	140.0
1998	139.0	141.9

Year	Actual Yield	Trend Yield
2000	149.0	145.7
2001	149.9	147.5
2002	132.6	149.4
2003	161.8	151.3
2004	177.7	153.2
2005	141.2	155.1
2006	160.8	157.0
2007	173.0	158.8
2008	176.0	160.7
2009	171.1	162.6
2010	154.5	164.5



# A Time for Change

*“If your time is worth savin  
Then you better start swimmin  
Or you’ll sink like a stone  
For the times they are a-changin’”*

Bob Dylan



# Catalysts for Change on the Horizon

- Producer/congressional demands for program improvements
- Greater use of farmer's own actual production history
- Permanent land descriptors with a permanent production history attached to the land
- Technological innovation – GIS & GPS, mapping, remote sensing, yield monitors etc. for data reporting, acreage measurements, etc.





# APH Program Improvements

- **Declining Yields - 2008 Farm Bill mandated USDA provide report to Congress on declining yields. To suggest:**
  - Alternative yield plug that relies on producer's own history rather than county averages
  - Replace t-yields with personal t-yield, similar to PTY pilot in N. Dakota
  - Variable percentage tied to number of actual yields
    - More actuals => higher percentage
- **3<sup>rd</sup> Party Damage**
- **Seed Technology**



# USDA Interface with the Producer

- Acreage/Crop Reporting Streamlining Initiative (Departmental Charter with USDA cross functional representation)
- Objective: Establish a common USDA framework for producer commodity reporting in support of USDA programs
  - Establish data standards of information used for producer commodity reporting
  - Report it once
- Increase consistency between USDA programs
- Facilitate greater data sharing between Agencies



# USDA Interface with the Producer

- Current programs
  - Labor-intensive
  - Imposes significant reporting burden on producers, agents, and AIP's
  - Provides opportunities for error
  
- New technologies offer significant potential for
  - Reducing manpower requirements
  - Increasing efficiency
  - Reducing costs
  - Improving program integrity
  - 'Softening' county boundaries



# Comprehensive Information Management System (CIMS)

- 2002 Farm Bill Initiative to develop a system to provide timely access to data for administering USDA programs
  - Utilize Common Land Unit (CLU)
  - Standardize reporting of entity, location, crop names, codes, reporting dates, business reporting requirements, production history, etc.
  - AIP's and FSA now can access



# Technology Impacts to Agriculture

- New technologies can now incorporate real time location reporting
  - Integrated yield monitors
    - Real-time reporting of production data
  - Integrated acreage counters
    - Real-time reporting of planted acreage
  - Field/soil mapping
    - Marry NRCS soil and hydrology data to field-level data



# Technology Impacts to Agriculture

- **Additional opportunities:**
  - Mapping technologies
    - Allow farmer/agent to visually identify tracts, etc.
    - CLU's would automatically append
  - Greater sharing of applications available to AIP's/agents? Or rely on AIP's to develop?
- **Compliance activities:**
  - Remote sensing of field and crop conditions
  - Monitoring systems for herbicides, pesticides, fertilizers and seeding populations



# Technology Impacts to Agriculture

## ■ Issues & hurdles

- Assess potential benefits, limitations, reliability, accuracy, and practicality
- Development of consistent and uniform standards across vendors for collection and reporting of data to multiple USDA agencies
- Assuring proper calibration and integrity of data so can't be manipulated, modified from the original readings/output
- Compatibility with automated systems of AIP's, RMA and FSA to facilitate transmission and sharing of data



# Technology Impacts to Agriculture

- Where we are currently:
  - 2011 Crop Insurance Handbook allows yield monitors as acceptable production report
    - Allows for separation of production from non-irrigated corners of a center pivot
  - 2011 Loss Adjustment Manual planned to allow yield monitors as acceptable production for claims
  - Continue to engage with technology vendors
    - Common interfaces
    - 'USDA' application
    - Appropriate standards, procedures, etc.





# State of APH Program

- In 1995, regulations established APH plan of insurance (since inception around 1990):
  - Reflected underwriting improvements identified in 1994 actuarial blueprint
  - Intent to more closely align individual guarantees with individual productivity to address program equity concerns and improve actuarial soundness
  - Represents last systematic review of APH program underwriting methods and procedures

# State of APH Program



- In 2009, APH-based programs accounted for:
  - 93 percent of all policies earning premium
  - 85 percent of all program liabilities
  - 91 percent of all premiums
- Fundamental basis of APH program is sound and does not require significant overhaul but:
  - Does not reflect advances and capabilities in data, technology, etc.
  - Need to reduce administrative burden, provide more appropriate insurance guarantees, and improve actuarial efficiency and program integrity



# Goals of APH Program Review

- In 2008 RMA established internal working group to conduct comprehensive evaluation of APH program. Specific objectives were:
  - Simplification – simplify administration, reduce complexity, and provide greater clarity/consistency
  - Efficiency – reduce costs, resource requirements, and personnel demands
  - Integrity – eliminate or mitigate effects of program vulnerabilities
  - Innovation – adapt new/forthcoming technological innovations as appropriate




# APH Program Concerns & Issues

- Issues include:
  - Program structured as series of annual policies between producers and AIP's
    - All data submitted to RMA each year, including all historical information
  - Program is unable to track geographical location of insured acreage
  - Fluidity' of production histories, production reporting, unit structures, etc.
    - Few impediments to forestall abuses
    - Data mining, compliance, etc. can only identify abuse after it has occurred, needs preventive help




# APH Program Concerns & Issues

- All records for a producer submitted to RMA annually:
  - Administratively burdensome on program stakeholders
  - No consistency or continuity across years
  - Tracking producers across years is an exercise in frustration
    - Time & resources required for such
    - Data/information lost in matching process




# APH Program - Permanent Database Concept

- Two permanent historical databases constructed and maintained, one for producer and other for land
  - Reside with RMA
  - Include acreage, yield, premium, liability, indemnity, etc.
    - Land descriptor would be CLU
    - Producer descriptor would be SSN
  - Insured's data would be annually reported with each years new experience simply added to previous history



# APH Program - Permanent Database Concept

- All producers required to annually report production
  - Group plan policyholders would be required to report production
  - Production reporting tied to current year's policy, not next year's policy
  - Data contained in permanent databases would be used for all program purposes, e.g., establishing guarantees, etc.
  - Historical data could not be 'lost' by insured/agent



# APH Program - Permanent Database Concept

- Benefits include:
  - Simplify production reporting requirements for producers
  - Enable efficient use of data mining capabilities to identify possible misreporting or fraud
  - Required production reporting would support data sharing across USDA





# Information Technology Modernization (ITM)

- Designed to accommodate new business rules
  - Permanent databases
  - Annual updates
  - Consistent file structure
  - Reporting of only necessary data elements
  - Operational database



- **Where do we go from here?**
  - RMA has had some informal discussions with NCIS
  - RMA will propose a process for development and implementation
  - Workgroups will be developed including companies, agents and stakeholders.



# Thank You

**Risk Management Agency  
Federal Crop Insurance Corporation  
Bill Murphy, Administrator  
(202) 690-2803  
[www.rma.usda.gov](http://www.rma.usda.gov)**