

## Dry Hay Conference Real-Time Local Weather Information

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NRCC

## How important is a weather forecast?

Farmers get about \$15 of value from every dollar spent on weather forecasting.

Conference on the Economic Benefits of Meteorological and Hydrological Services, Geneva, Switzerland, 19-23 September 1994 : extended abstracts of papers for the presentation at the conference. WMO Library Call Number: WMO TD 630

El Niño forecasts generate a 13-26% economic return to the U.S. economy.

Benefits to U.S. agriculture from altering planting decisions are estimated at \$265 - \$300 million.

Weiher, Rodney, ed. *Improving El Niño Forecasting: The Potential Economic Benefits*, NOAA, U.S. Department of Commerce, 1997, p.29, p.41, p.43, p. 47, for U.S. Agriculture, Corn Storage, Fisheries and Operational Forecast System respectively.

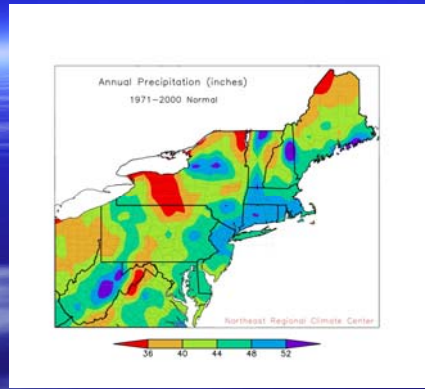
Weather and climate sensitive industries, both directly and indirectly, account for about one-third of United States' GDP, or \$3 trillion, ranging from finance, insurance and real estate to services, retail and wholesale trade and manufacturing.

Dutton, John A., *Opportunities and priorities in a new era for weather and climate services*, Bulletin of the American Meteorological Society, September 2002, pp. 1303-1311

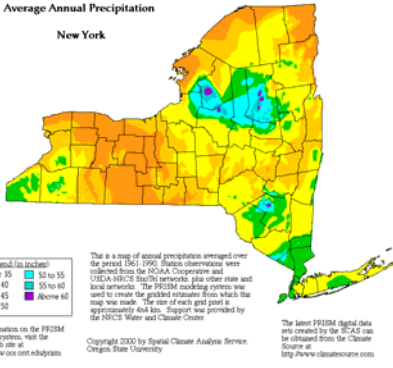
## What type a weather data is important for agriculture?

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Precipitation maps?



Average Annual Precipitation  
New York



The type of weather data is determined by the type of crop.

Weather Variables specific to hay

**Humidity**

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Sunny, warm days have the effect of lowering the relative humidity of the air and thereby increasing its ability to absorb water while also increasing the rate at which water is driven from the plants.

### Average Relative Humidity (percent) Morning (M), Afternoon (A)

Data through 1998 (50 years)

	Apr	May	Jun	Jul	Aug	Sep						
	M	A	M	A	M	A						
BGM	76	56	78	56	83	59	84	58	89	60	90	63
BUF	76	58	75	55	78	56	79	55	83	58	84	60
ROC	77	55	77	54	80	56	83	55	87	58	88	61
SYR	76	53	76	55	79	56	81	56	86	58	88	62

<http://www.nws.noaa.gov/mdl/synop/products/bullform.met.htm>

#### List of States & Territories

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts

#### List of Stations by State

- Select as many Eta MOS station bulletins as you wish to see. Then proceed to the bottom of the document and submit your request.

#### Alabama

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  - CALERA (KEET)
  - DECATUR (KDOU)
  - DOTHAN (KDHN)
  - EVERGREEN (KGZH)
  - FT. RUCKER (KOZR)
  - GADSDEN (KGAD)
  - HUNTSVILLE (KHSV)
  - MADISON CNTY EXEC AP (KMDQ)
  - MAXWELL AFB (KMXF)
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- New Hampshire
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- North Dakota

#### New York

- ALBANY (KALB)
- BINGHAMTON (KBGM)
- BUFFALO (KBUF)
- DANVILLE (KDSV)
- DUNKIRK (KDKK)
- ELMIRA (KELM)
- FARMINGDALE (KFRG)
- FORT DRUM (KGTB)
- FULTON (KFZY)
- GLENS FALLS (KGFL)
- ISLIP (KISP)
- ITHACA (KITH)
- JAMESTOWN (KJHW)
- MASSENA (KMSS)
- MONTAUK (KMTP)
- MONTGOMERY (KMGJ)

## Sources for Weather Information

KROC ETA MOS GUIDANCE 3/08/2007 1200 UTC																						
DT	/MAR 8/MAR 9					/MAR 10					/MAR 11											
HR	18	21	00	03	06	09	12	15	18	21	00	03	06	09	12	15	18	21	00	06	12	
N/X					5					32				29					46	28		
TMP	20	18	15	12	9	8	9	18	28	32	30	31	32	33	35	39	43	42	39	33	29	
DPT	10	9	7	5	4	3	4	7	13	16	19	21	23	25	26	31	36	35	34	29	26	
CLD	OV	OV	SC	SC	SC	FW	SC	SC	SC	SC	SC	SC	SC	SC	SC	BR	OV	OV	OV	OV	OV	
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WSP	10	09	05	05	05	04	04	07	09	08	07	06	07	08	10	14	11	11	09	07		
P06		17		3		1		3		0		1		6		23		59	25	12		
P12					7			3					6					69	36			
Q06		0		0		0		0		0		0		0		1		0	0			
Q12					0			0		0		0		0		2		0				
T06		0/0	0/5	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	1/	2999/99								
T12			2/10		0/0			2/17		1/0				999/99								
SNW					1					0												
CIG	5	6	8	8	8	8	8	8	8	8	8	8	8	8	8	7	6	6	3	4	5	4
VIS	4	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	5	5	7	7
OBV	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	BR	BR	N	N

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How to adjust the time to east coast?

Take Zulu time and subtract:

5 hours during winter

4 hours during summer

EX:

18Z = 18 - 5 = 13 → 1 pm eastern time

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Difference between air temperature and dew point temperature (TMP – DPT) is called **dew point depression**. The smaller the dew point depression the higher the relative humidity

Example:

TMP - DPT  
 20 - 10 = 10 → RH = 47%  
 9 - 4 = 5 → RH = 70%

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TMP - DPT	RH
10	47
9	51
8	55
7	60
6	64
5	70
4	74
3	80
2	86
1	93
0	100

## Weather Variables specific to hay

Wind Speed

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Brisk winds and fluffy, porous windrows are distinct aids in increasing drying.

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SNW	1 0 0		
CIG	5 6 8 8 8 8 8 8 8 8 8 8 8 8 7 6 6 3 4 5 4		
VIS	4 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 5 5 7 7		
OBV	N N N N N N N N N N N N N N N N N N N BR BR N N		

## WIND FORECAST

WDR 34 35 06 10 14 13 12 13 13 12 12 16 18 18 17 19 22 25 28 27 28  
WSP 10 09 05 05 05 04 04 07 09 08 07 06 07 07 08 10 14 11 11 09 07

WDR = 34 → 340  
WDR = 06 → 60

WSP = 10 knots \* 1.12 = 11.2 mph

## Weather Variables

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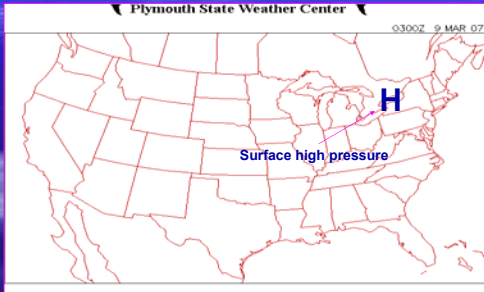
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Related to the moisture content of the soil, heavier dews usually occur for several days after a good soaking rain, then decrease in intensity as dryness continues.

## General Weather Systems

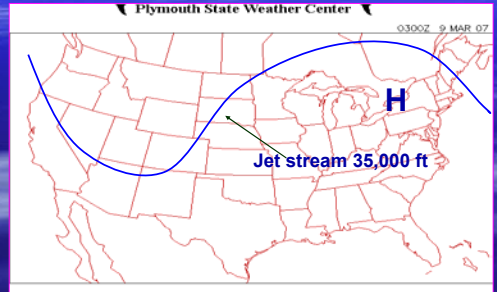
## High Pressures

High pressure usually persists for several consecutive days with clear skies and ideal weather to harvest hay.



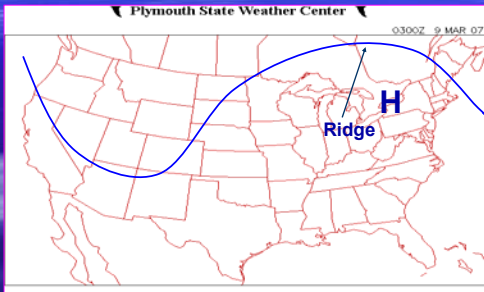
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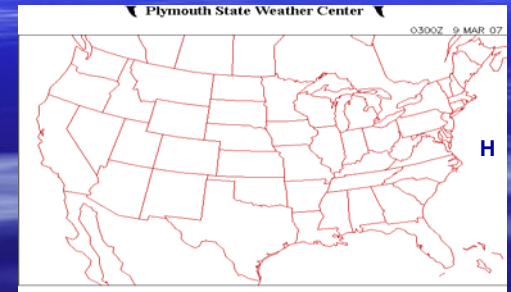
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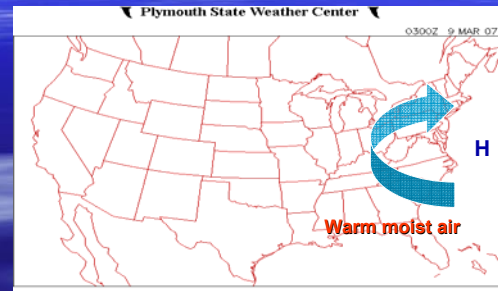
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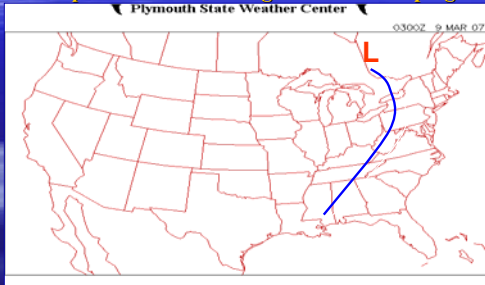


## Fronts

Showers accompanying the cold front make this time unsuitable for cutting hay. Wait for definite signs the front has passed and a clearing trend is developing.

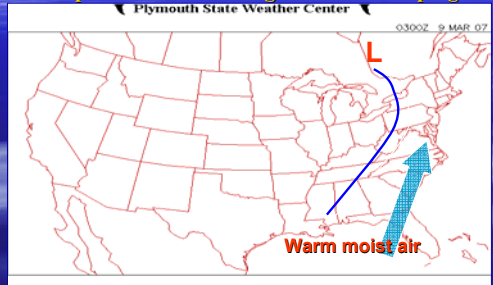
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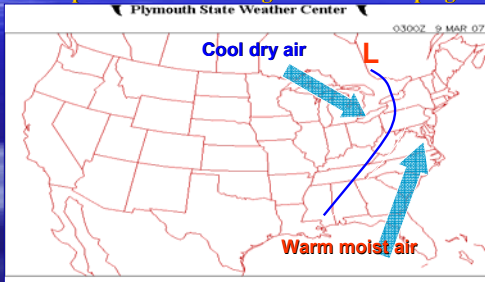
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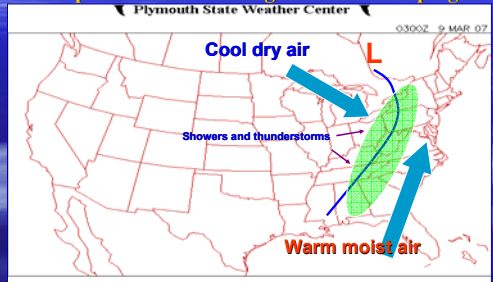
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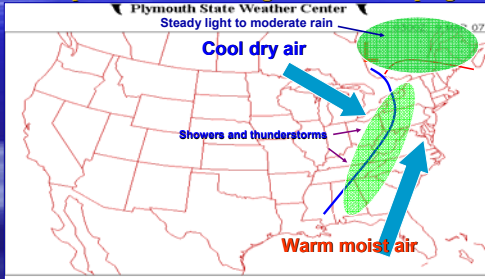
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