



# Ipsos Poll Conducted for Bangor Daily News

Maine Polling: 10.14.14

These are findings from Ipsos polling conducted for the Bangor Daily News from October 6-12. State-specific sample details are below. The data are weighted to Maine's current population voter data (CPS) by gender, age, education, and ethnicity. Ipsos' Likely Voter model (applied to Voting Intention questions only) uses a seven-item summated index, including questions on voter registration, past voting behavior, likelihood of voting in the upcoming election, and interest in following news about the campaign.

Statistical margins of error are not applicable to online polls. All sample surveys and polls may be subject to other sources of error, including, but not limited to coverage error and measurement error. Figures marked by an asterisk (\*) indicate a percentage value of greater than zero but less than one half of one per cent. Where figures do not sum to 100, this is due to the effects of rounding.

## MAINE POLLING

A sample of 1,004 Maine residents, including 903 Registered Voters (RVs) and 540 Likely Voters (LVs), age 18 and over in Maine was interviewed online. The credibility interval for a sample of 1,004 is 3.5 percentage points; 3.7 percentage points for a sample of 903; and 4.8 percentage points for a sample of 540.

### Q1. Thinking about the upcoming general election in November of this year, if the election for U.S. Senator from Maine were held today, for whom would you vote?

	Likely Voters (LV)	Registered Voters (RV)	Democrats (RV)	Republicans (RV)	Independents (RV)
Susan Collins, Republican	56%	53%	34%	84%	50%
Shenna Bellows, Democrat	31%	31%	56%	4%	21%
Erick Bennett, Independent	4%	5%	1%	6%	11%
Another candidate	1%	2%	*%	2%	*%
Will not/do not plan to vote	*%	1%	1%	1%	*%
Don't know / Refused	7%	9%	7%	3%	18%

### Q2. Thinking about the upcoming general election in November of this year, if the election for Governor of Maine were held today, for whom would you vote?

	Likely Voters (LV)	Registered Voters (RV)	Democrats (RV)	Republicans (RV)	Independents (RV)
Paul LePage, Republican	36%	30%	6%	70%	23%
Mike Michaud, Democrat	42%	43%	71%	11%	33%
Eliot Cutler, Independent	16%	19%	19%	13%	32%
Another candidate	1%	1%	*%	2%	*%
Will not/do not plan to vote	*%	1%	*%	1%	*%
Don't know / Refused	5%	6%	4%	4%	12%

### Q3. Thinking about the upcoming general election in November of this year, if the election for Governor of Maine were held today and Eliot Cutler (Independent) was not on the ballot, for whom would you vote?

	Likely Voters (LV)	Registered Voters (RV)	Democrats (RV)	Republicans (RV)	Independents (RV)
Paul LePage, Republican	41%	35%	8%	78%	29%
Mike Michaud, Democrat	50%	52%	84%	14%	43%
Another candidate	3%	5%	4%	3%	8%
Will not/do not plan to vote	*%	1%	*%	1%	*%
Don't know / Refused	6%	7%	3%	4%	19%

**Q4. Thinking about the upcoming general election in November of this year, if the election for Governor of Maine were held today and Mike Michaud (Democrat) was not on the ballot, for whom would you vote?**

	Likely Voters (LV)	Registered Voters (RV)	Democrats (RV)	Republicans (RV)	Independents (RV)
Paul LePage, Republican	38%	32%	10%	71%	23%
Eliot Cutler, Independent	49%	50%	71%	20%	56%
Another candidate	6%	8%	11%	4%	7%
Will not/do not plan to vote	*%	2%	2%	1%	1%
Don't know / Refused	7%	8%	6%	4%	12%

**Q5. Thinking about the upcoming general election in November of this year, if the vote for Question 1 (the Maine Bear Hunting Ban Initiative) were held today, which way would you vote? The question will appear as follows:**

**"Do you want to ban the use of bait, dogs or traps in bear hunting except to protect property, public safety, or for research?"**

	Likely Voters (LV)	Registered Voters (RV)	Democrats (RV)	Republican (RV)	Independent (RV)
Yes	43%	45%	56%	31%	43%
No	49%	47%	38%	61%	42%
Will not/do not plan to vote	*%	1%	*%	1%	1%
Don't know / Refused	7%	8%	5%	7%	15%

**Q6. Would you say you are generally favorable or unfavorable towards these public figures?**

Base: Registered Voters	Very favorable	Somewhat favorable	Somewhat unfavorable	Very unfavorable	TOTAL FAVORABLE	TOTAL UNFAVORABLE
Susan Collins	36%	37%	19%	8%	73%	27%
Angus King	28%	39%	22%	11%	67%	33%
Eliot Cutler	19%	46%	25%	10%	65%	35%
Mike Michaud	31%	32%	19%	18%	63%	37%
Chellie Pingree	14%	41%	30%	15%	55%	45%
Paul LePage	20%	22%	13%	45%	42%	58%

PARTY ID	All Likely Voters (LV)	All Registered Voters (RV)
Democrat	44%	45%
Republican	39%	31%
Independent	16%	19%
None/Don't Know	1%	5%

## How to Calculate Bayesian Credibility Intervals

The calculation of credibility intervals assumes that  $Y$  has a binomial distribution conditioned on the parameter  $\theta$ , i.e.,  $Y|\theta \sim \text{Bin}(n, \theta)$ , where  $n$  is the size of our sample. In this setting,  $Y$  counts the number of “yes”, or “1”, observed in the sample, so that the sample mean ( $\bar{y}$ ) is a natural estimate of the true population proportion  $\theta$ . This model is often called the likelihood function, and it is a standard concept in both the Bayesian and the Classical framework. The Bayesian <sup>1</sup> statistics combines both the prior distribution and the likelihood function to create a posterior distribution. The posterior distribution represents our opinion about which are the plausible values for  $\theta$  adjusted after observing the sample data. In reality, the posterior distribution is one’s knowledge base updated using the latest survey information. For the prior and likelihood functions specified here, the posterior distribution is also a beta distribution ( $\pi(\theta|y) \sim \beta(y+a, n-y+b)$ ), but with updated hyper-parameters.

Our credibility interval for  $\vartheta$  is based on this posterior distribution. As mentioned above, these intervals represent our belief about which are the most plausible values for  $\vartheta$  given our updated knowledge base. There are different ways to calculate these intervals based on  $\pi(\theta|y)$ . Since we want only one measure of precision for all variables in the survey, analogous to what is done within the Classical framework, we will compute the largest possible credibility interval for any observed sample. The worst case occurs when we assume that  $a=1$  and  $b=1$  and  $y=n/2$ . Using a simple approximation of the posterior by the normal distribution, the 95% credibility interval is given by, approximately:

$$\bar{y} \pm \frac{1}{\sqrt{n}}$$

For this poll, the Bayesian Credibility Interval was adjusted using standard weighting design effect  $1+L=1.3$  to account for complex weighting<sup>2</sup>

Examples of credibility intervals for different base sizes are below. Ipsos does not publish data for base sizes (sample sizes) below 100.

Sample size	Credibility intervals
2,000	2.5
1,500	2.9
1,000	3.5
750	4.1
500	5.0
350	6.0
200	7.9
100	11.2

<sup>1</sup> *Bayesian Data Analysis, Second Edition, Andrew Gelman, John B. Carlin, Hal S. Stern, Donald B. Rubin, Chapman & Hall/CRC | ISBN: 158488388X | 2003*

<sup>2</sup> *Kish, L. (1992). Weighting for unequal Pi. Journal of Official, Statistics, 8, 2, 183200.*