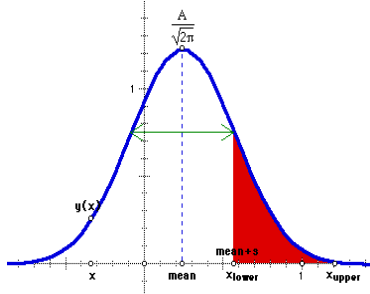


Statistics Without Math



**Barry D. Nussbaum, Chief Statistician
U.S. Environmental Protection Agency**



Florida Pesticide
Residue Workshop

July 19, 2010

1

Think Like a Statistician

- This is all it takes



2

Stop

- The Problem with Surveys
 - Who is asking ?
 - What are they asking ?
 - How did they select the sample?
 - How many people responded?
 - How did they word the question?
 - Don't be fooled by "precision"

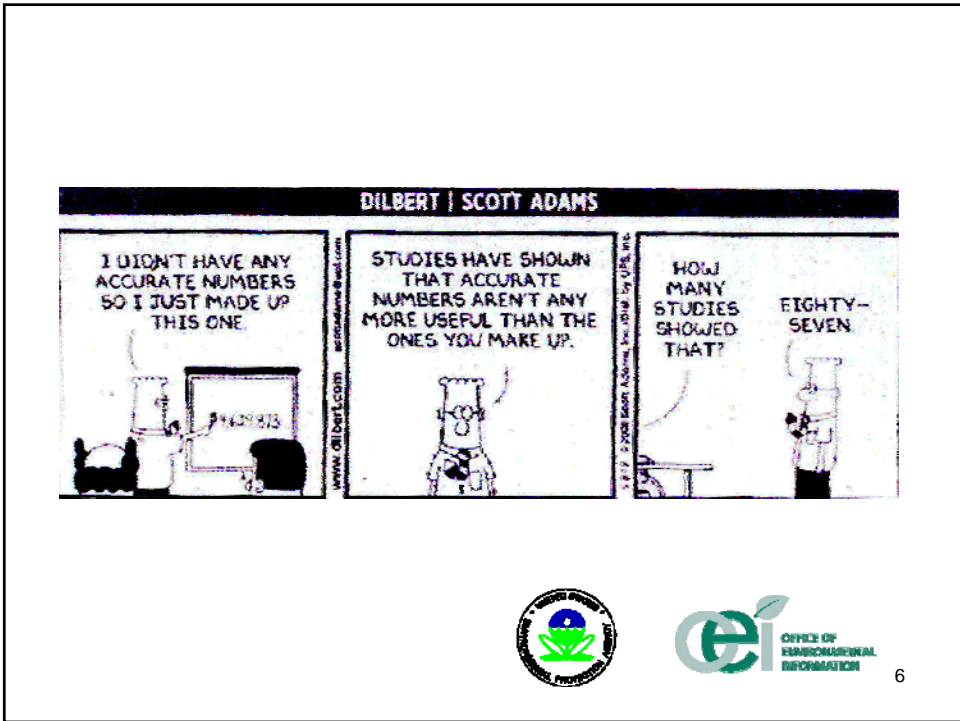
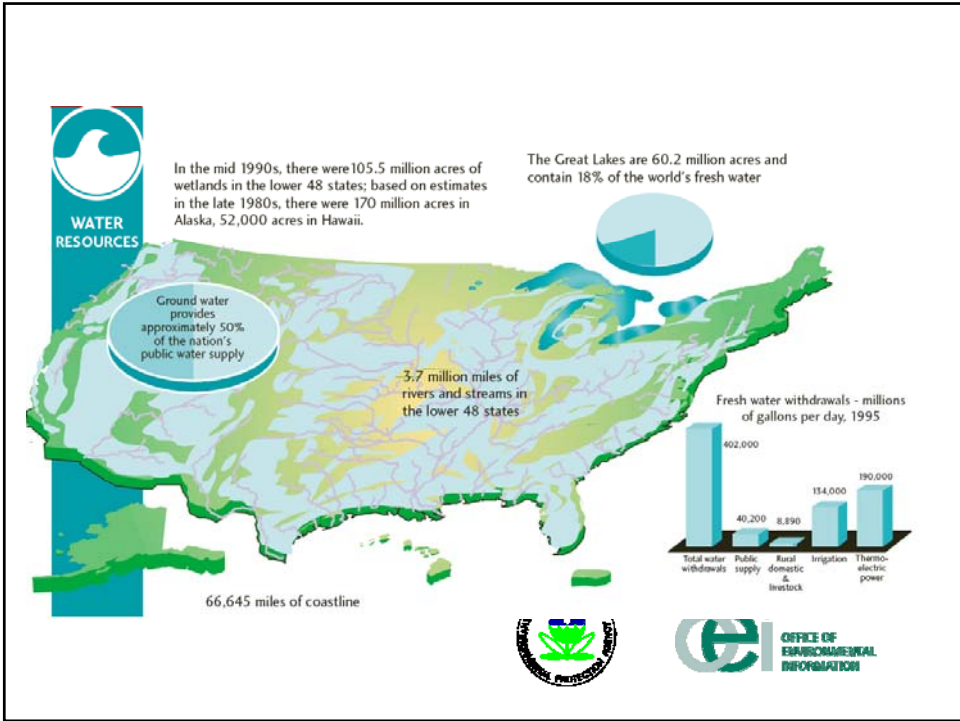


3

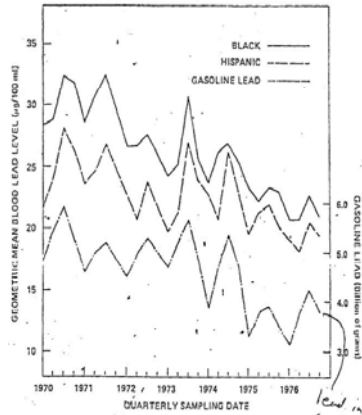
Questionnaire Solicitations

SEARS VALUES YOUR FEEDBACK!
TELL US ABOUT YOUR EXPERIENCE AND YOU COULD WIN A \$4,000 SEARS GIFT CARD. PLEASE VISIT OUR WEBSITE WITHIN 7 DAYS OF THE DATE OF PURCHASE!
WWW.SEARSFEEDBACK.COM
TO COMPLETE THE SURVEY YOU WILL NEED THE 12 DIGIT SALES CHECK NUMBER ON YOUR RECEIPT.
POR FAVOR TOMATE EL TIEMPO PARA PROPORCIONARNOS TU INFORMACION Y PARTICIPA EN UN SORTEO CON LA OPORTUNIDAD DE GANAR UNA TARJETA DE REGALO SEARS DE \$4000. VISITA LA PAGINA DE INTERNET WWW.SEARSFEEDBACK.COM
NO PURCHASE NECESSARY. VOID WHERE PROHIBITED. ENTRIES MUST BE ENTERED WITHIN 7 DAYS OF DATE OF PURCHASE. ENTRANTS MUST BE 18 OR OLDER TO ENTER. SEE COMPLETE RULES ON WEBSITE.
SATSIFACTION GUARANTEED OR YOUR MONEY BACK
A RECEIPT DATED WITHIN 90 DAYS IS REQUIRED FOR A RETURN OR EXCHANGE WHICH WOULD BE 02/02/10. OTHER RULES APPLY. SEE BACK OF RECEIPT FOR DETAILS.

THE HOME DEPOT More saving. More doing.
STORE MGR: ALEXANDRIA, VA 22312 (703)642-3660
4640 00018 91021 07/04/10 12:06 PM
CASHIER TONY - 199697 * ORIG REC: 4640 (06) 07/02/10 TA *
78125611005 PULL -1.79
SALES TAX -0.09
TOTAL -41.88
XXXXXXXX9210 STORE CREDIT -1.89
TA
REFUND-CUSTOMER COPY
GUARANTEED LOW PRICES
LOOK FOR HUNDREDS OF LOWER PRICES STOREWIDE
ENTER FOR A CHANCE TO WIN A \$5,000 HOME DEPOT GIFT CARD
Share Your Opinion With Us! Complete the brief survey about your store visit and enter for a chance to win it!
www.homedepot.com/opinion
PARTICIPA EN UNA OPORTUNIDAD DE GANAR UNA TARJETA DE REGALO DE \$5,000
¡Comparte Su Opinión! Complete la breve encuesta sobre su visita a la tienda y tenga la oportunidad de ganar en:
www.homedepot.com/opinion



Look: Simple Presentation of Data Used in Policy



7

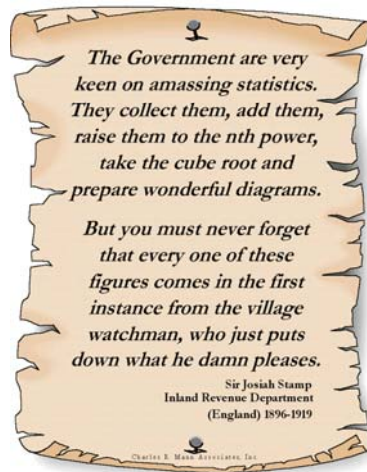
Listen

- Where did the data come from?



8

Accuracy of Data Collection Efforts



9

Sample Size

- Most frequently asked question
- Assumes all the elements of the sample respond



10

Nussbaum's Bias

If you have a lousy
sample and triple the
sample size, you still
have NOTHING

