The art of science communication: using PowerPoint effectively

Ben Fertig

Integration and Application Network

University of Maryland Center for Environmental Science

bfertig@hpl.umces.edu 410.221.2046

Science Communication Course

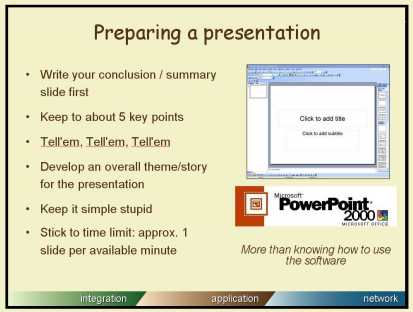
Charleston, SC
8 April, 2008

University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

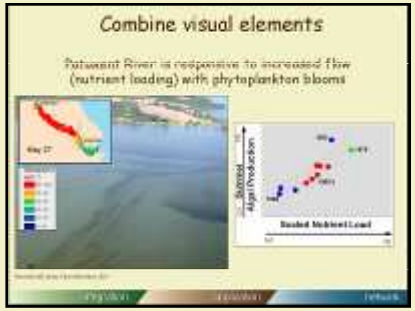
Integration & Application Network

Outline

- Preparing your presentation
  - Communicating your message effectively



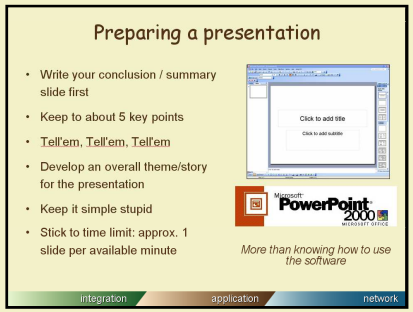
- Preparing good quality slides
  - Pitfalls
  - Hints and tips to maximize usefulness



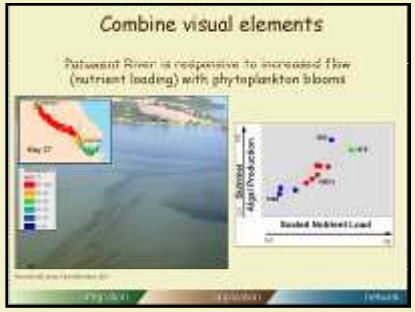
- Presenting your talk

Outline

- Preparing your presentation
  - Communicating your message effectively



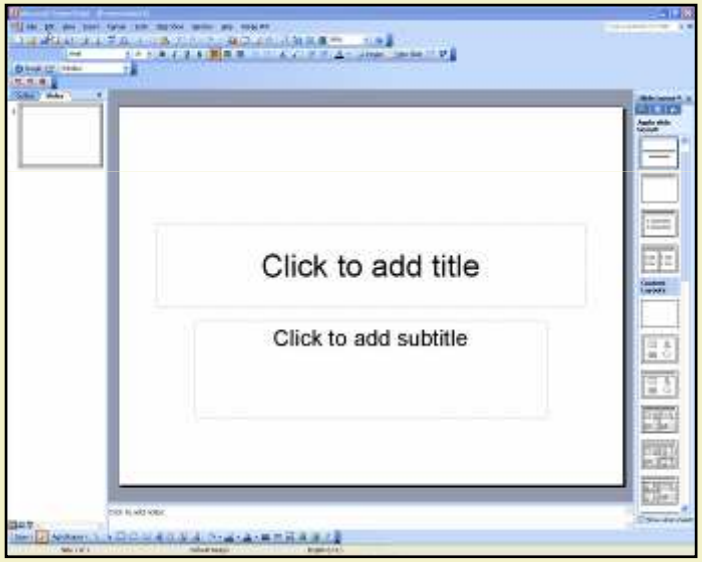
- Preparing good quality slides
  - Pitfalls
  - Hints and tips to maximize usefulness



- Presenting your talk

Preparing a presentation

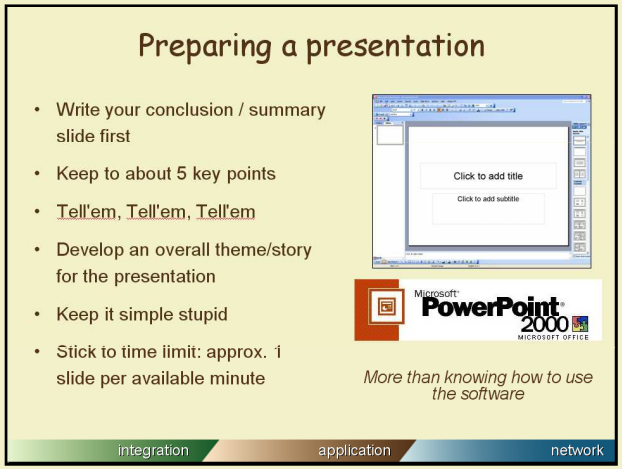
- Write your conclusion / summary slide first
- Keep to about 5 key points
- Develop an overall theme/story
- Stick to time limit: approx. 1 slide per available minute
- Get to the point (e.g. show data within 5 minutes)

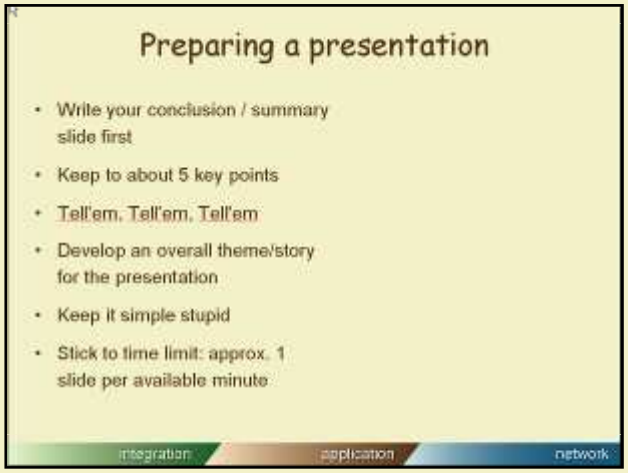


More than knowing the software

Preparing a presentation

- Tell'em, Tell'em, Tell'em
- Keep it simple stupid
- Avoid jargon or acronyms
- Target your audience
- Prepare good quality slides





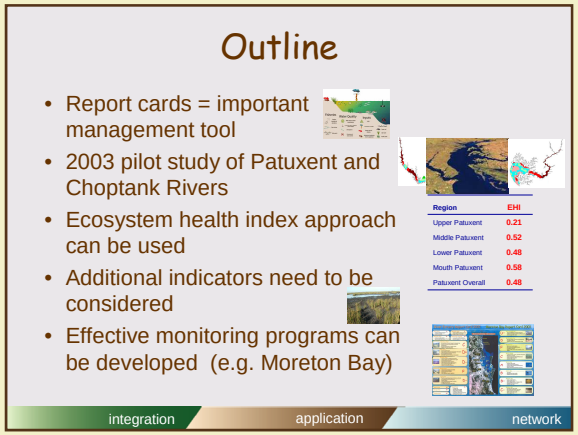
Every slide should have visual elements

Designing a good scientific presentation

- Title slide – title, authors, affiliations, date

Visual elements can introduce yourself & the topic

- Outline of talk – explain organization & preview conclusions

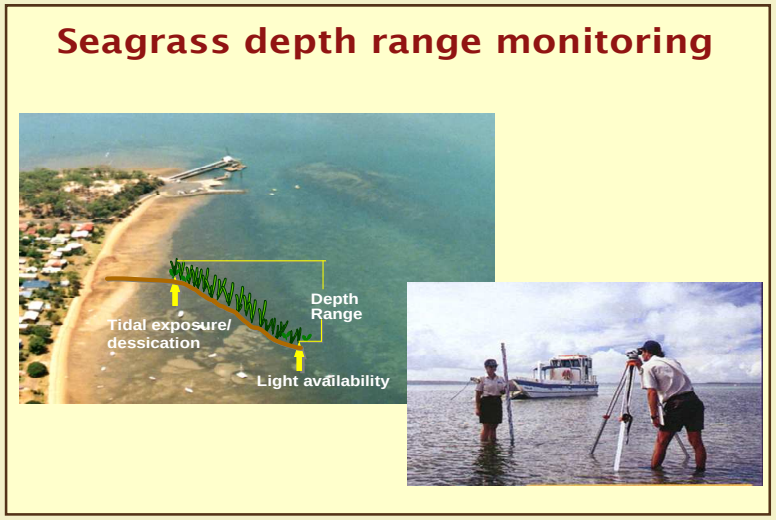


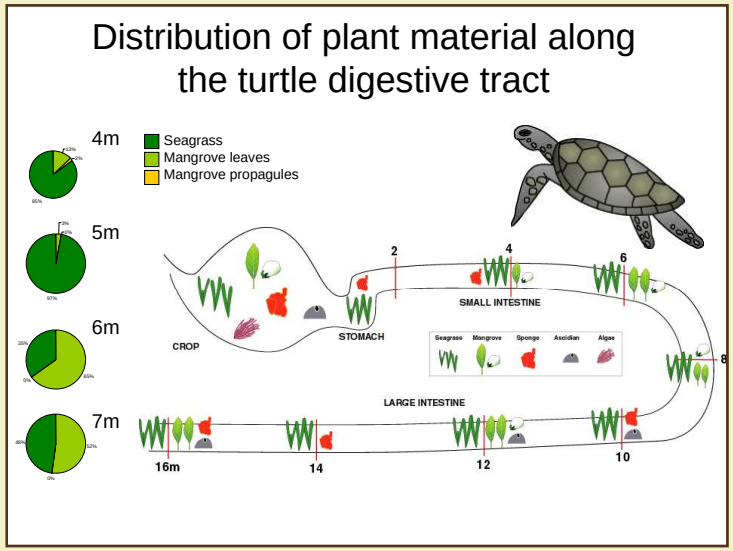
A guide to the talk and can provide conclusions

Designing a good scientific presentation

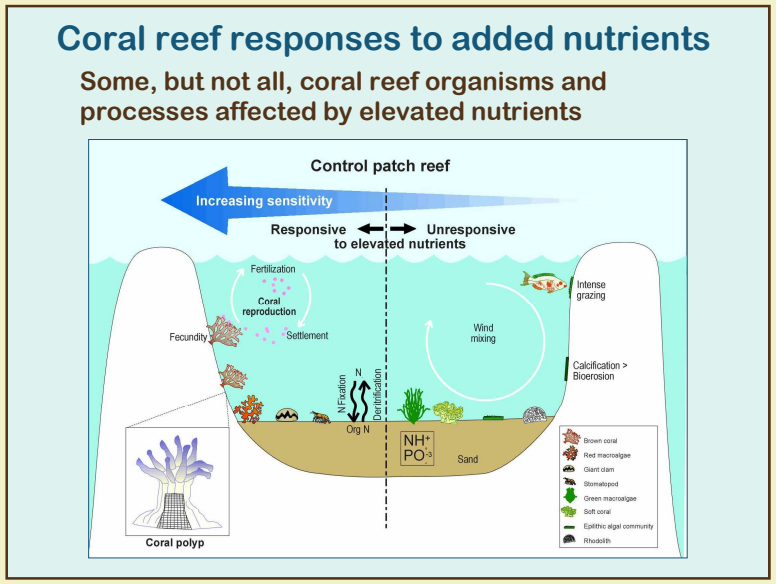
Body of talk:

Methods





Results



Data summary

integration application network

Designing a good scientific presentation

- Conclusions – take-home messages, stimulate questions

- Acknowledgements – specify roles

Conclusions

- *Thalassia* as an effective bio-indicator for the Caribbean
- Use of $\delta^{15}N$ clarified anthropogenic influences to both high and low rainfall Caribbean systems
- A dry Caribbean Lagoon, Yucatan shows high sewage nitrogen inputs and high phosphorus inputs from submarine vents
- A wet Caribbean Lagoon, Bocas del Toro shows high total nitrogen and phosphorus inputs from watershed sources

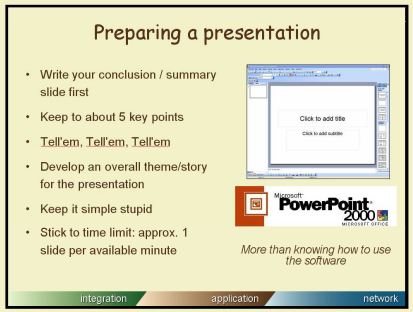
Acknowledgements

- Chesapeake Bay Program for making aquatic grasses a priority since 1976
- Funding agencies for **aerial survey**: EPA, NOAA, VA DEQ and CRM, MD DNR, USACE
- Funding agencies for **aquatic grass restoration**: NOAA (NMFS, CZM and Sea Grant), KCF, VMRC, DoD (USACE, Legacy, USAEC, APG), EPA, NFWF, CBT, CBF, NAIB, MPA, USGS, MD DNR, VIMS, Hopewell WWTP

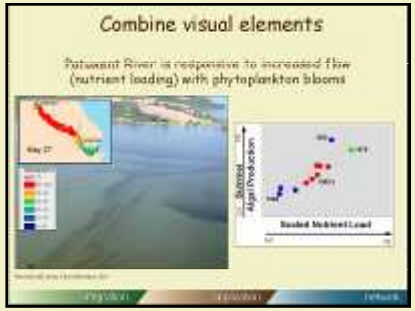
Virginia Institute of Marine Science VIMS · University of Maryland Center for Environmental Science · Maryland Department of Natural Resources · USGS science for a changing world

Outline

- Preparing your presentation
  - Communicating your message effectively



- Preparing good quality slides
  - Pitfalls
  - Hints and tips to maximize usefulness



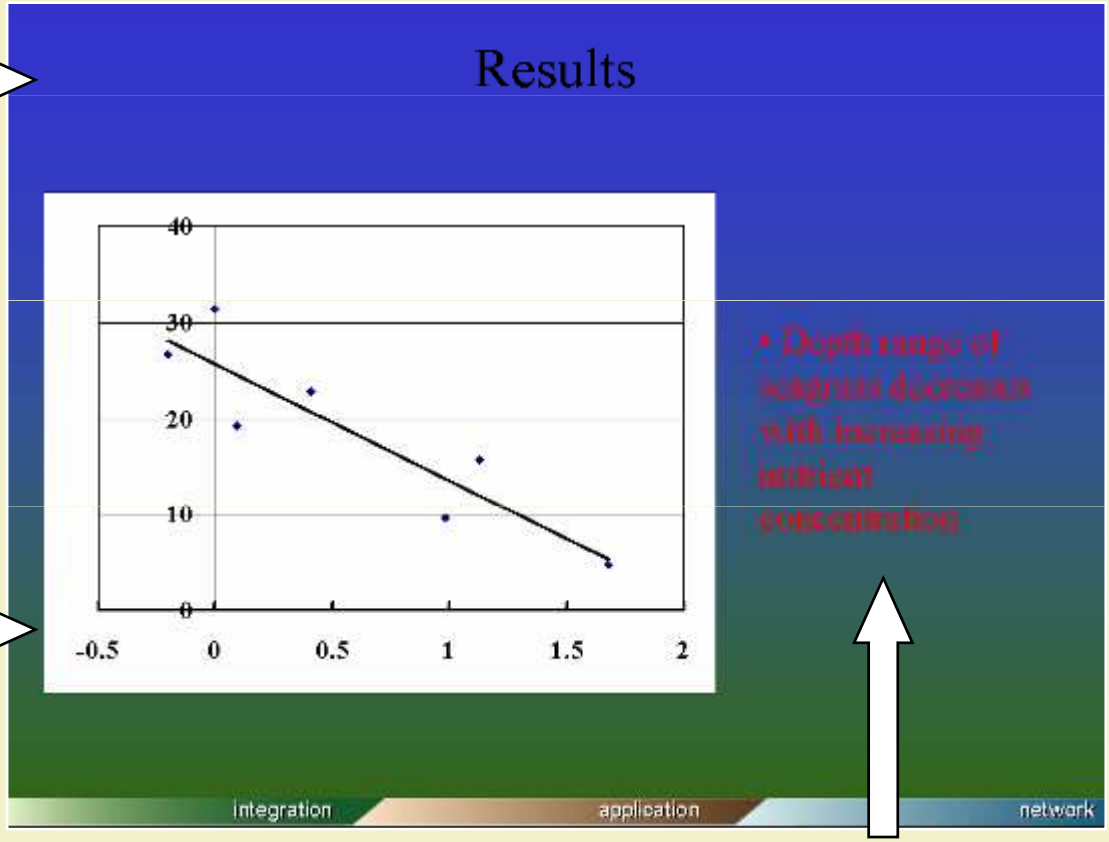
- Presenting your talk

PowerPoint presentations can be poorly organized

Boring title gives no clue to slide contents

Bad font and color choice

Poorly formatted graph



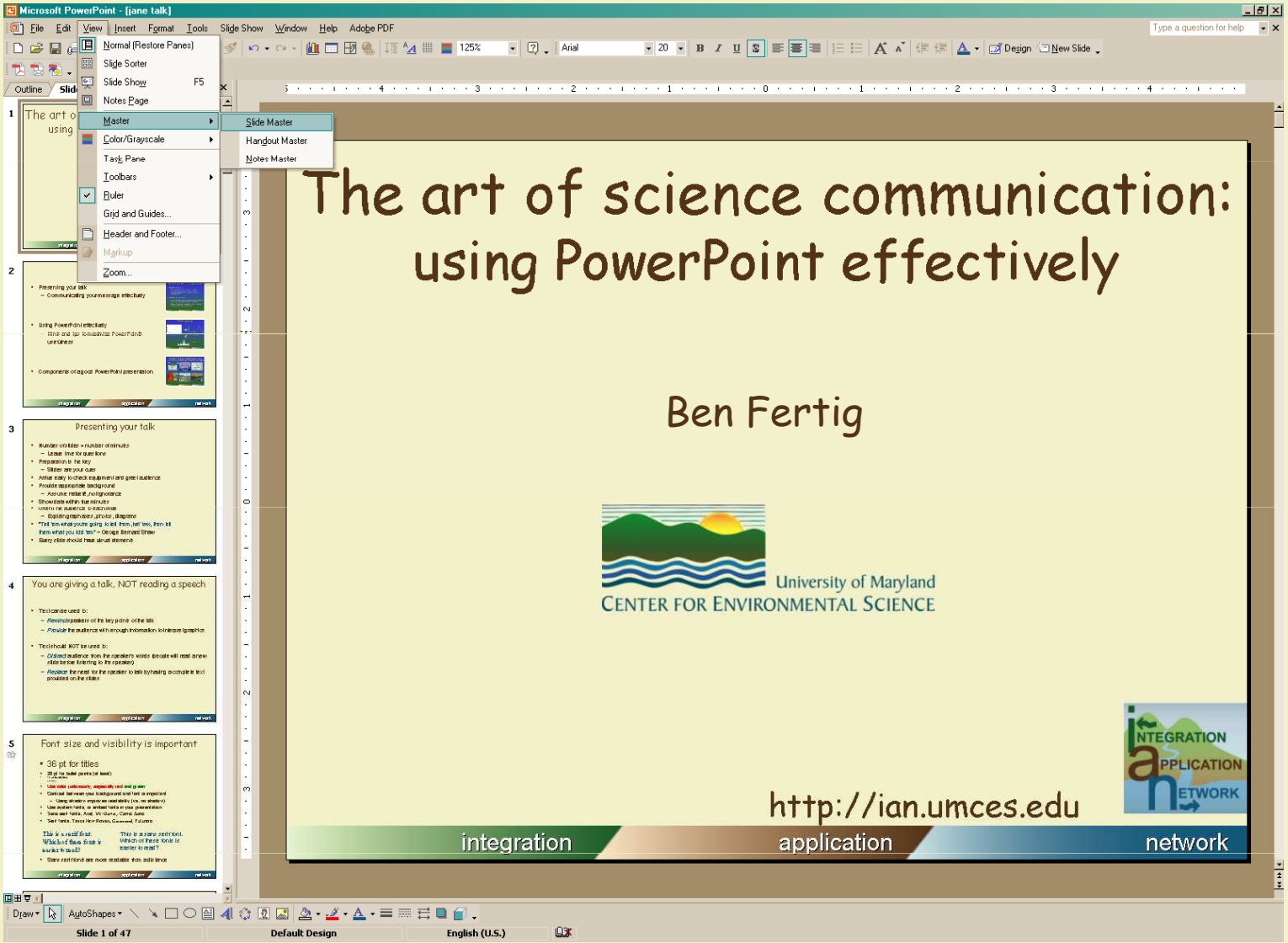
Text box with poor left alignment; bad font and color

Overuse of PowerPoint effects is distracting

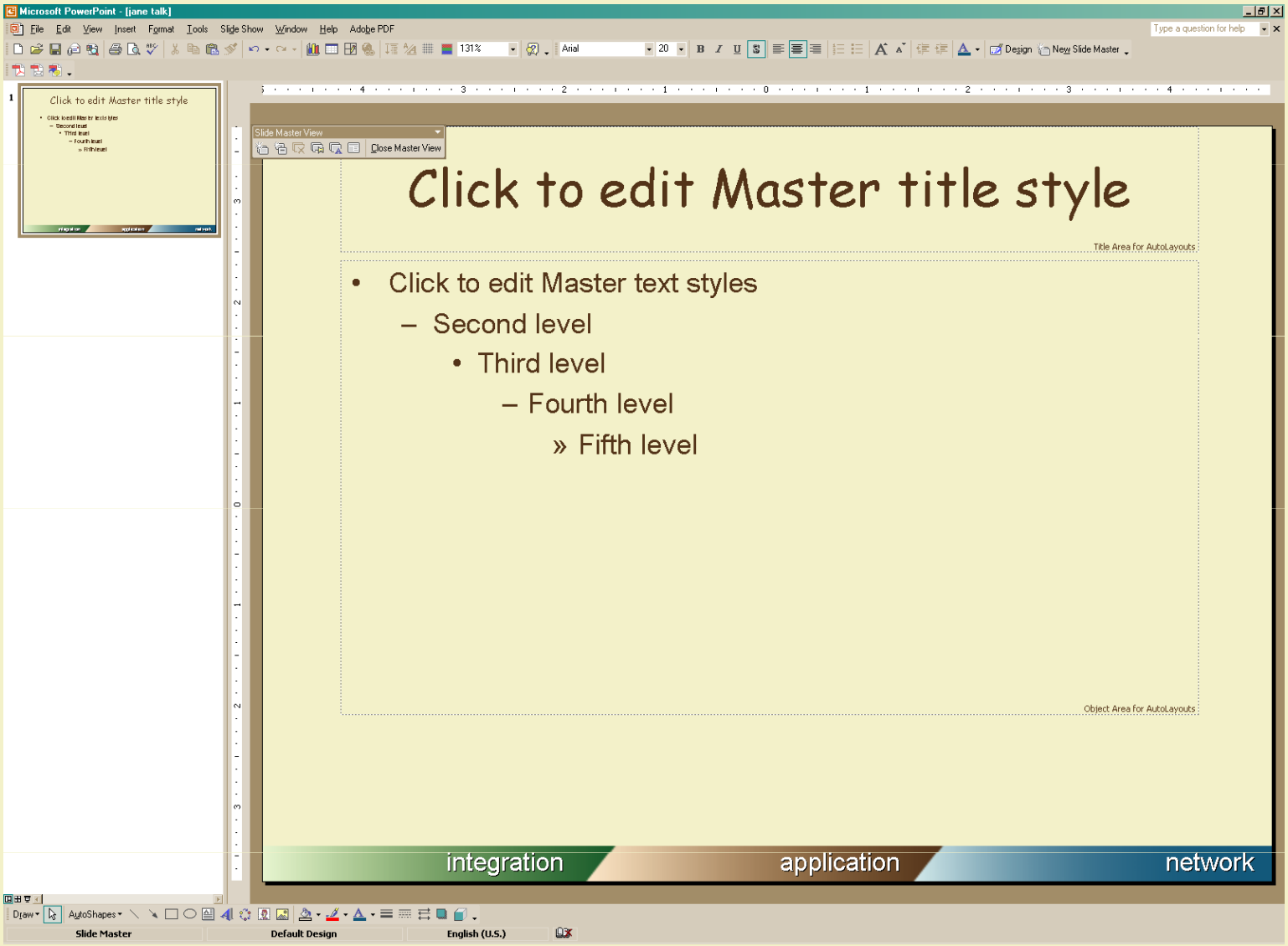
Effects become annoying

Focus should be on the content, not on the presentation

The Slide Master provides consistency



The Slide Master provides consistency



PowerPoint presentations can be well organized

Active title sets the scene
Good color and font choice

Data is well formatted and legible

Consistent look maintained

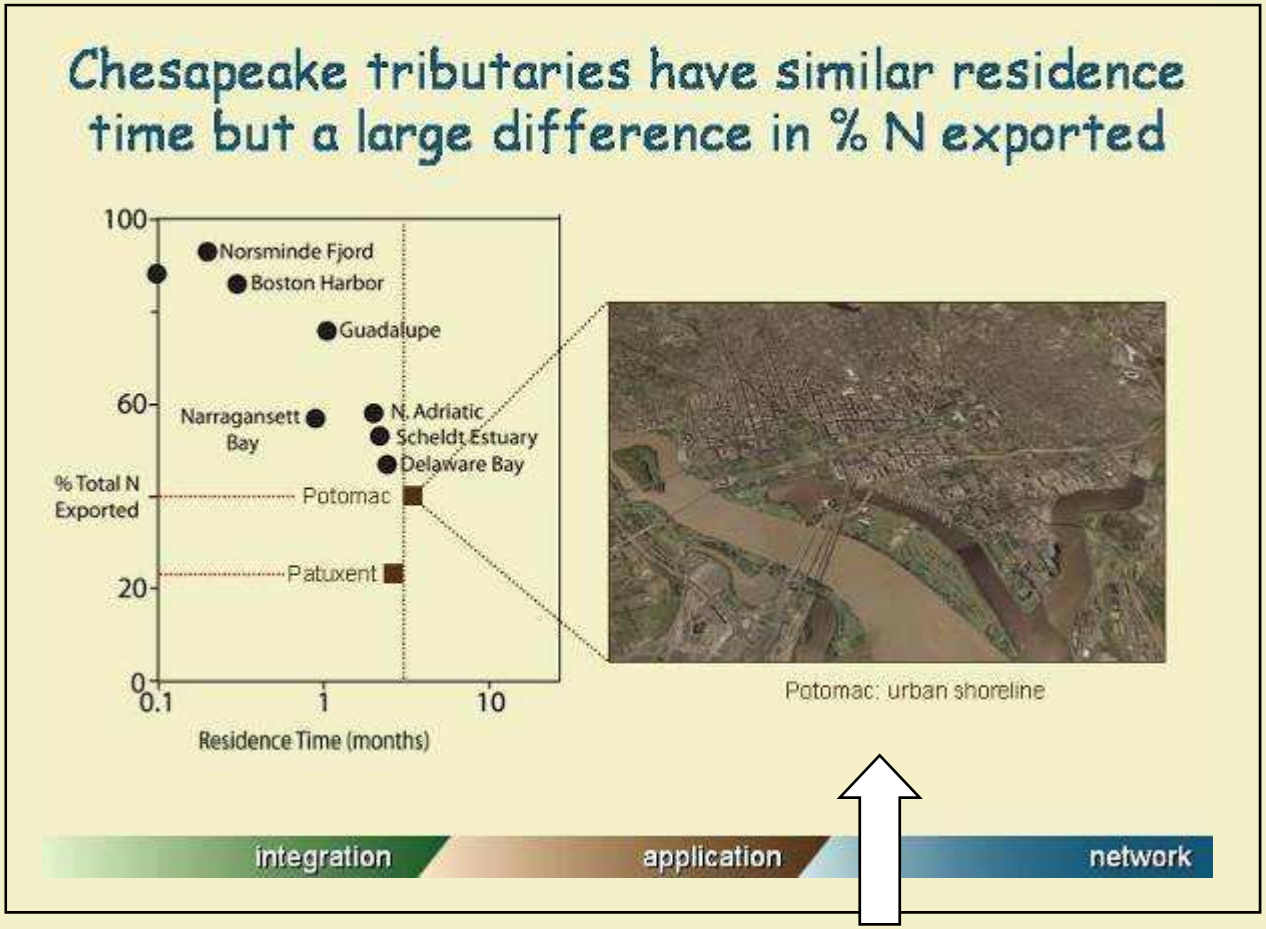
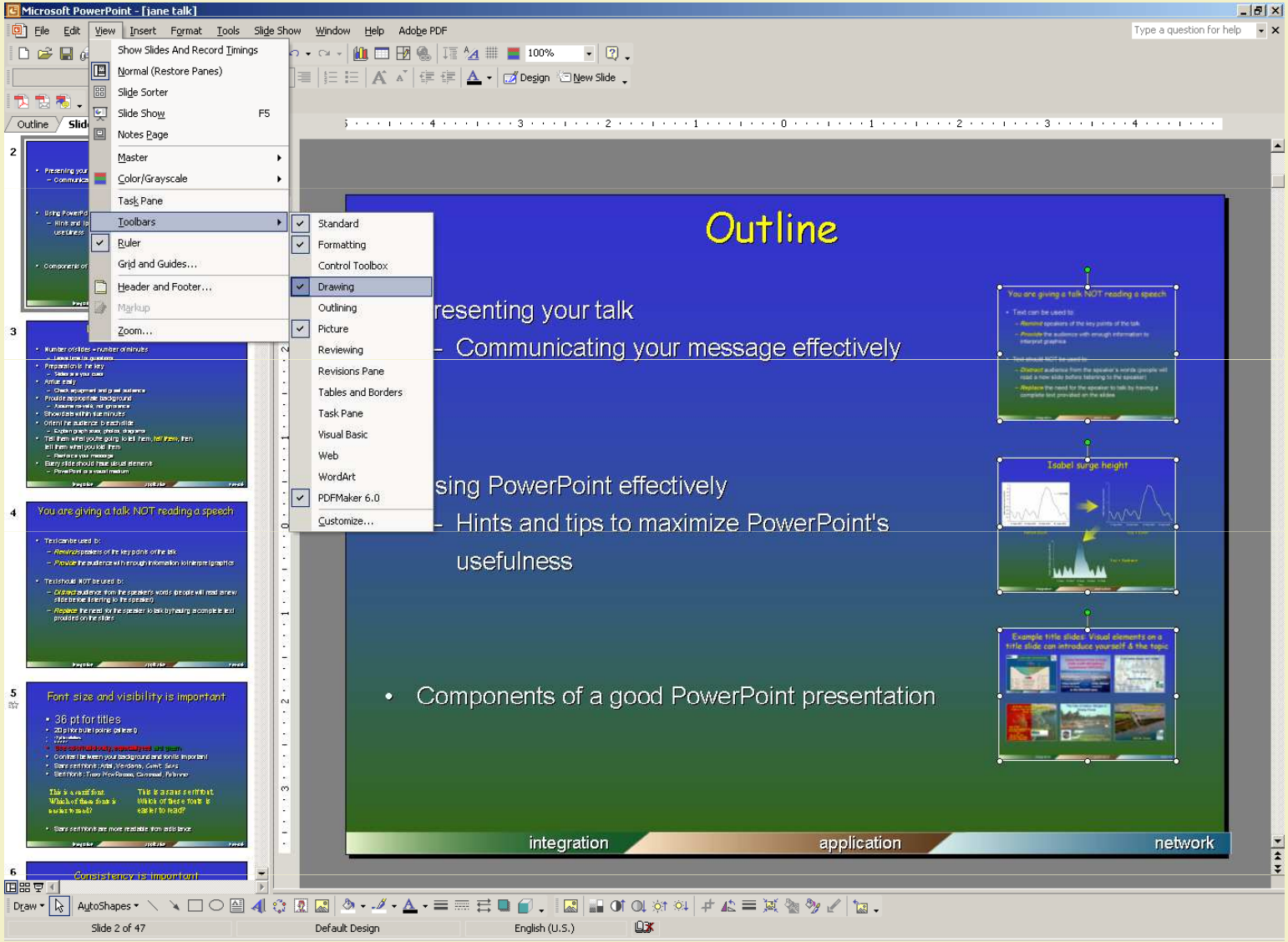
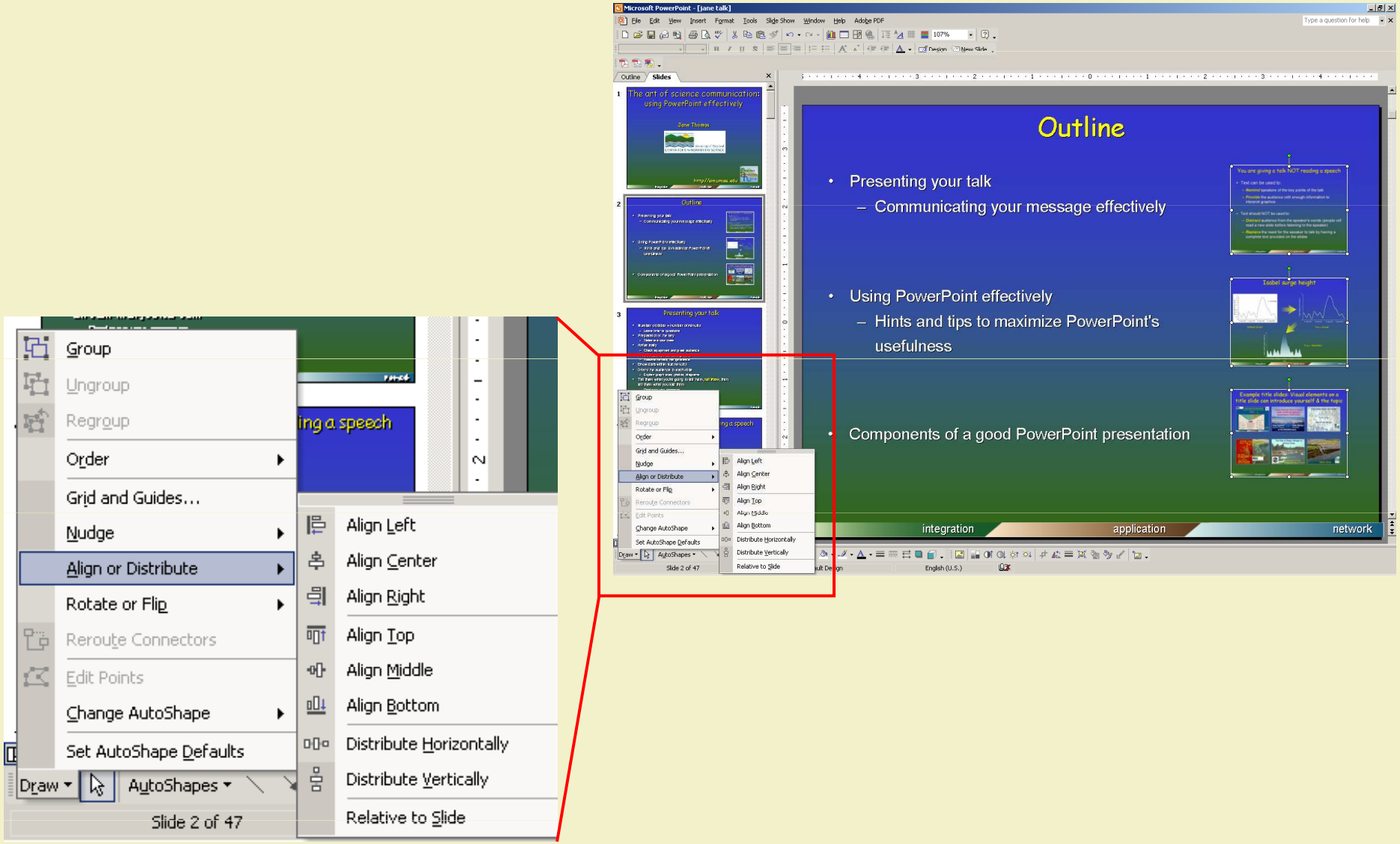


Photo aligned properly and labeled

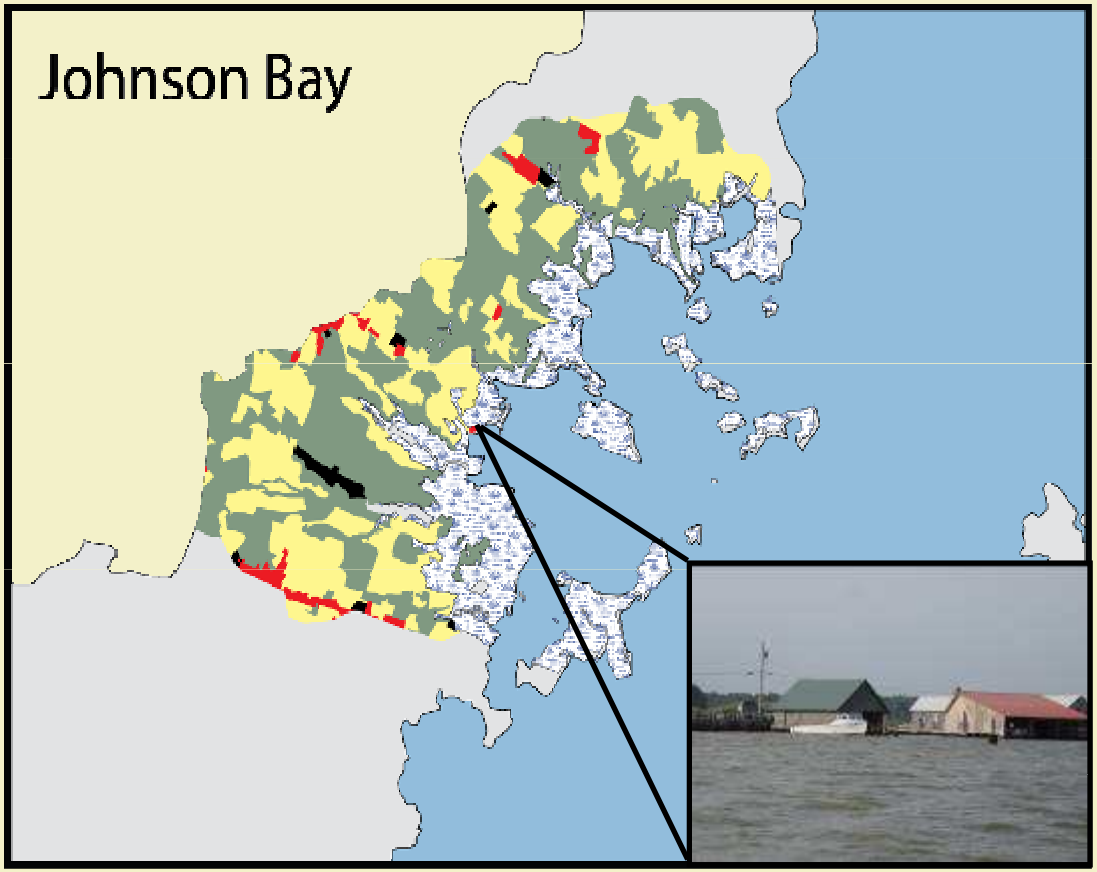
Use PowerPoint's *Align or Distribute* function

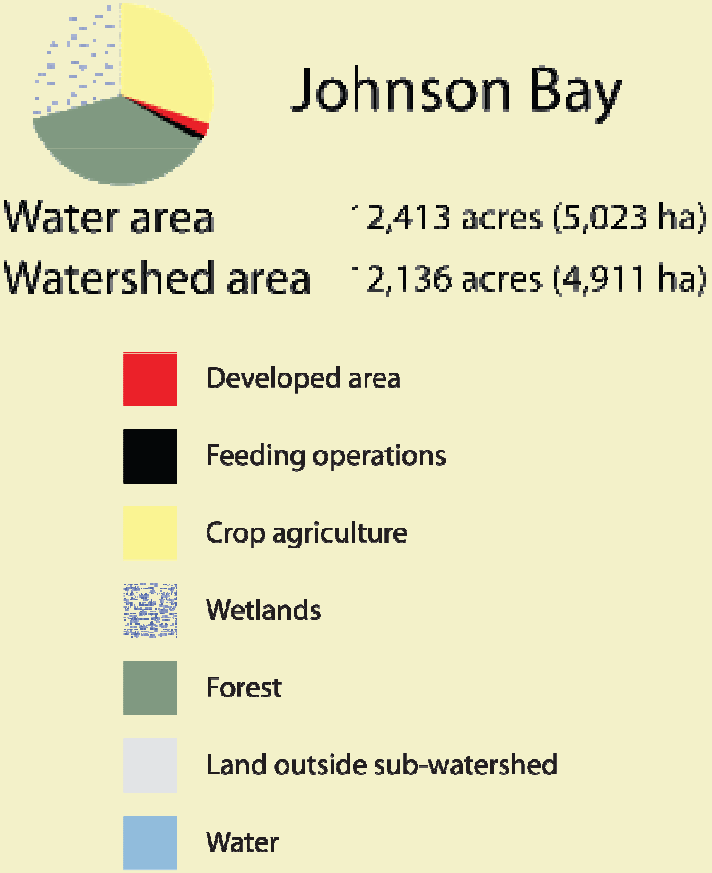


Use PowerPoint's *Align or Distribute* function



Combine visual elements to provide context





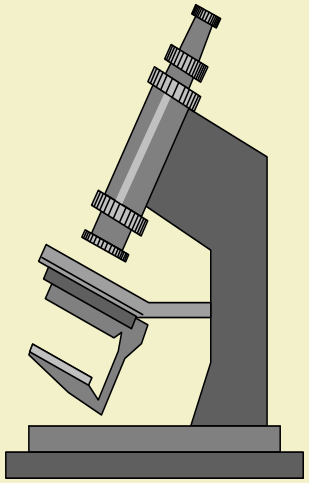
- Feeding operations situated close to streams

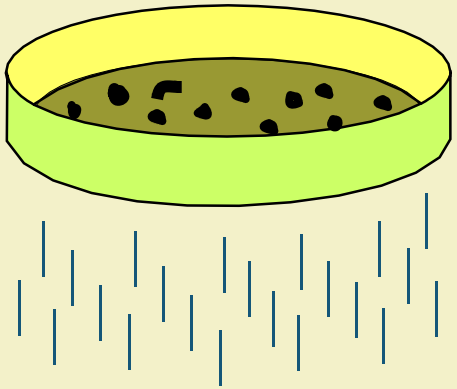
Effective use of animation to show steps in methodology

Slow release fertilizer
(88 g N m^{-2} : 22 g P m^{-2})

Incubate for
10 days

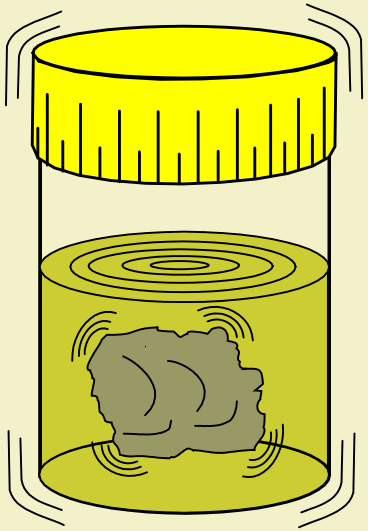
Dinoflagellates are
classified, counted
and recorded



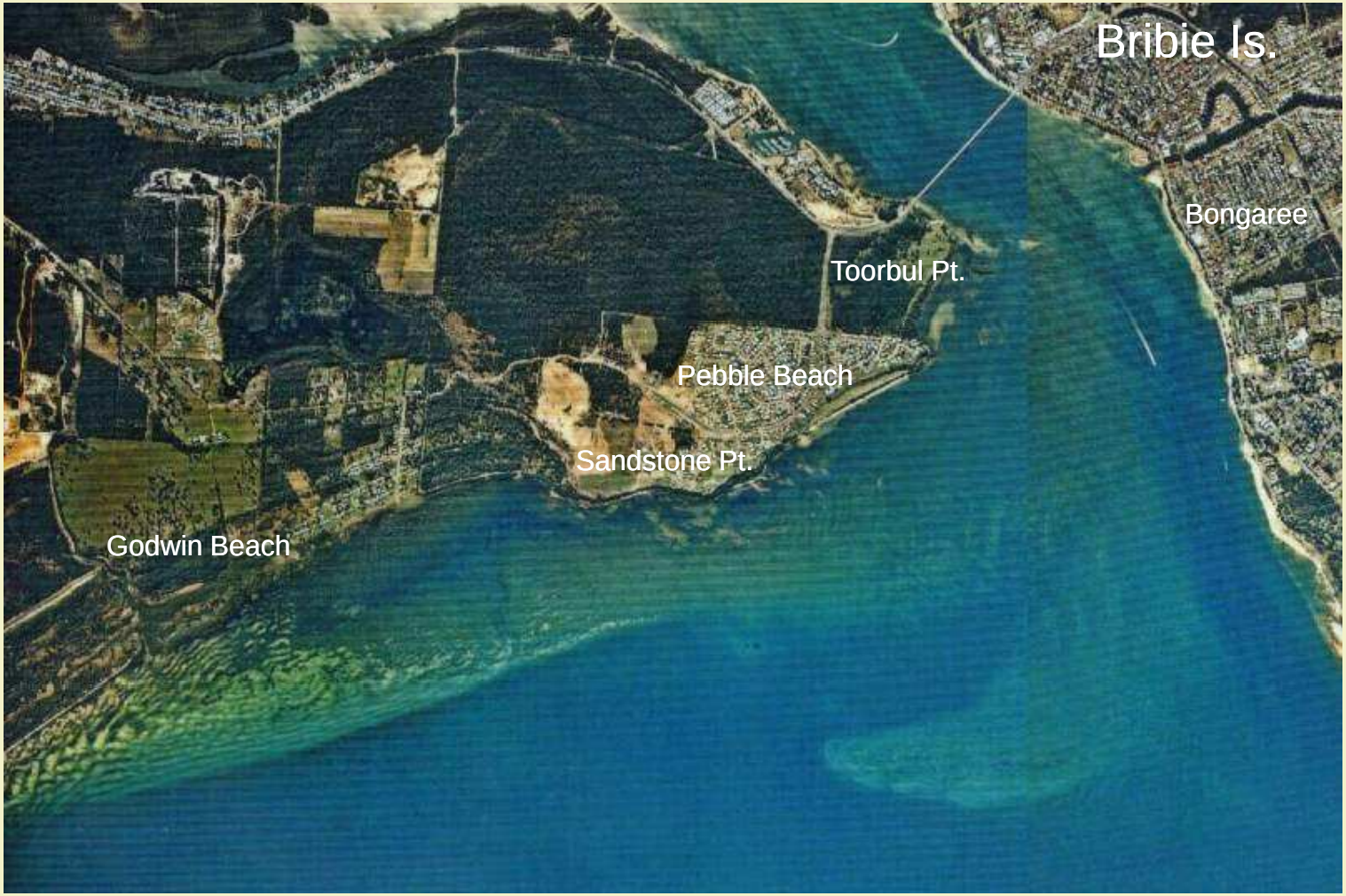


20µm size fraction collected

Dinoflagellates are
washed from the
surface of the host



A map sequence using the 'animation' function can be effective

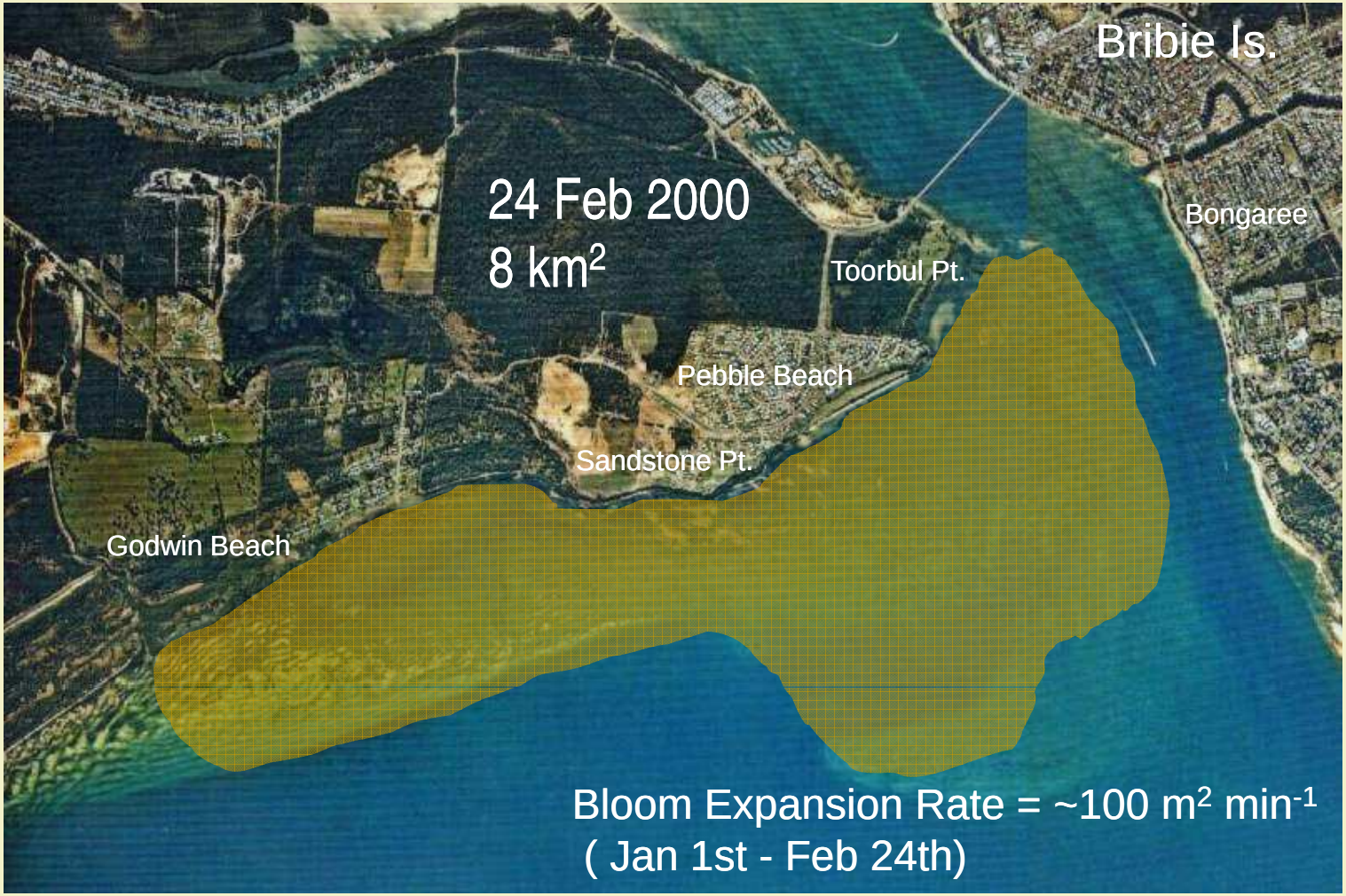


A map sequence using the 'animation' function can be effective

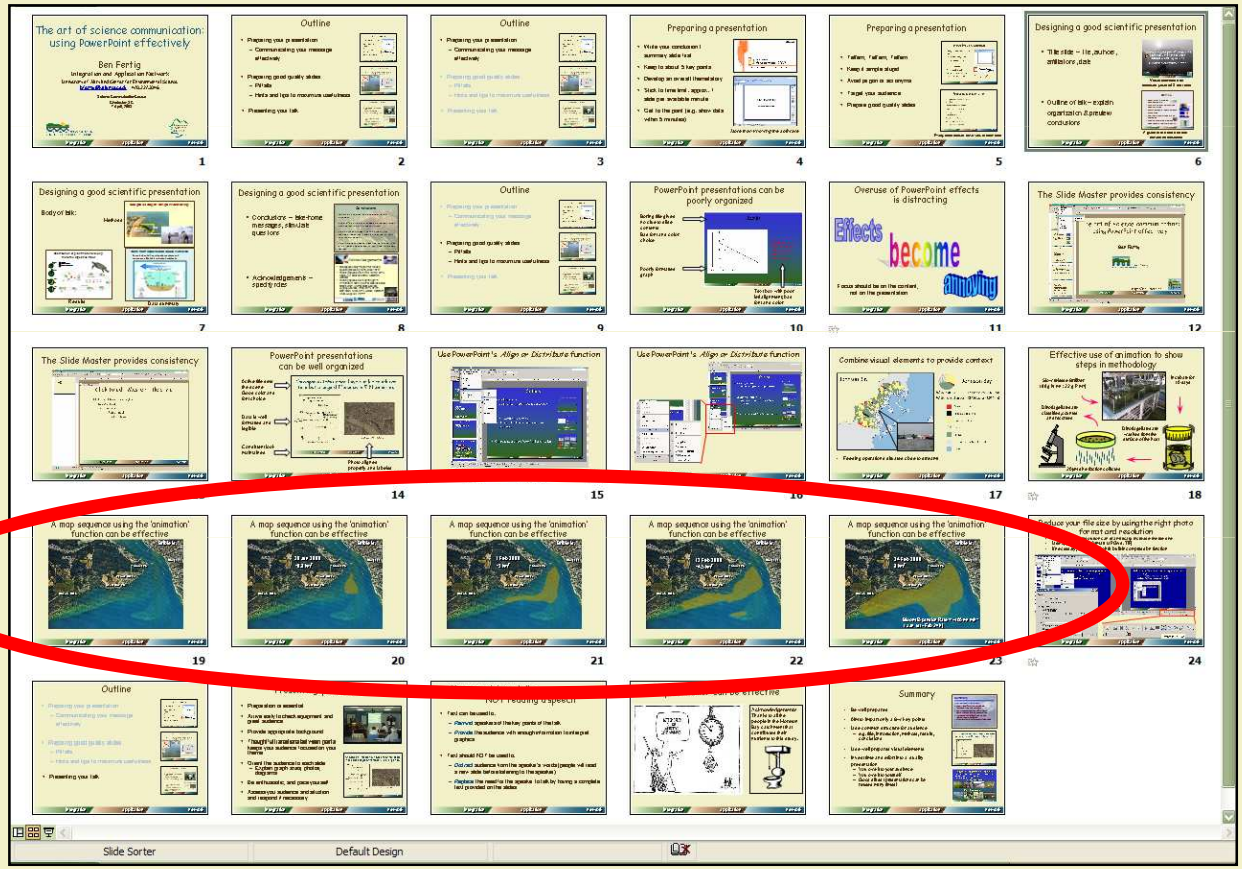
A map sequence using the 'animation' function can be effective

A map sequence using the 'animation' function can be effective

A map sequence using the 'animation' function can be effective

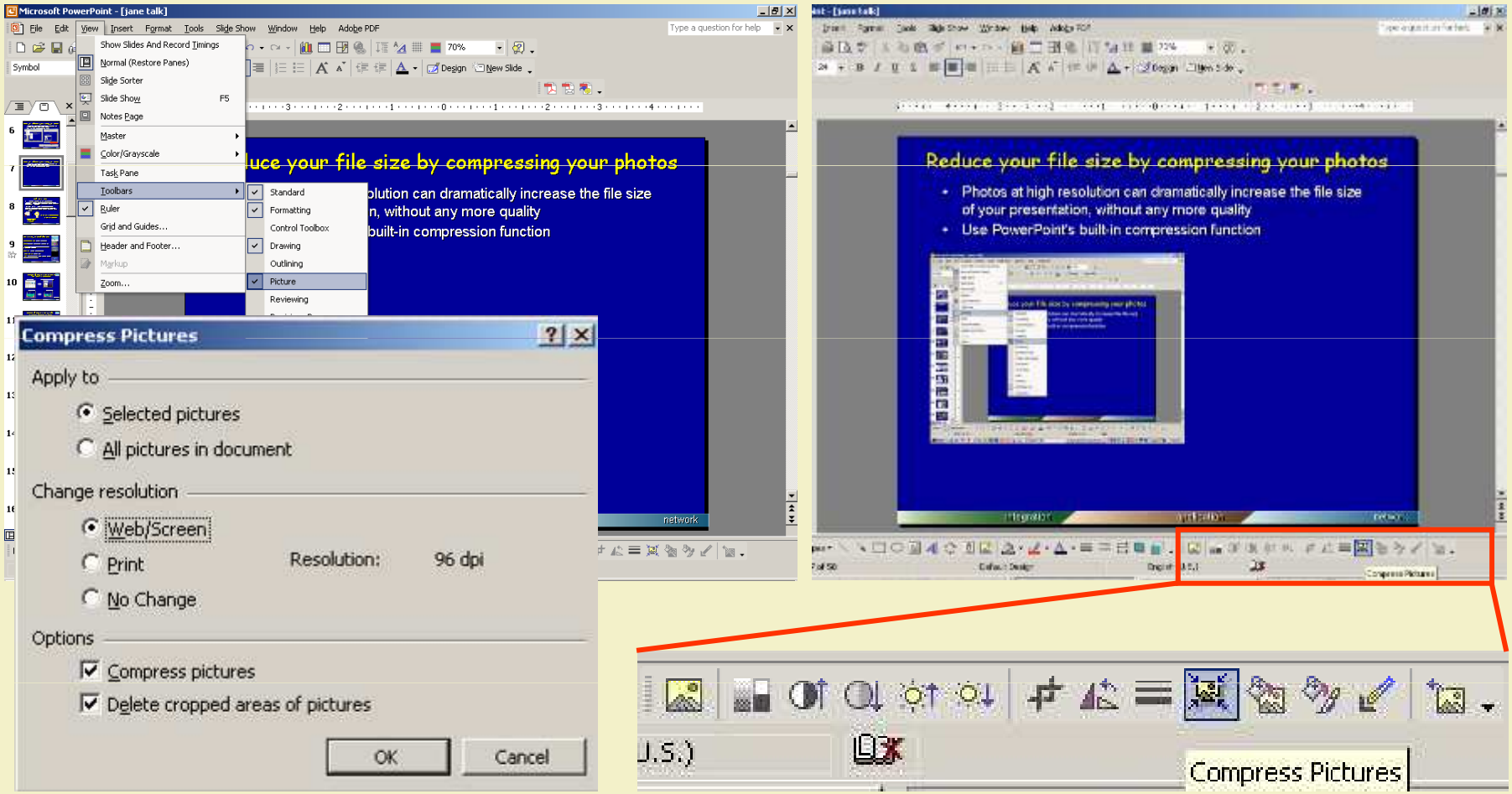


Builds can be created using multiple slides



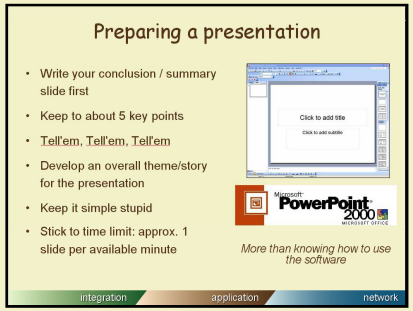
Reduce your file size by using the right photo format and resolution

- Photos at high resolution can dramatically increase the file size
- Use appropriate file formats (JPG vs. TIF)
- If necessary, use PowerPoint's built-in compression function

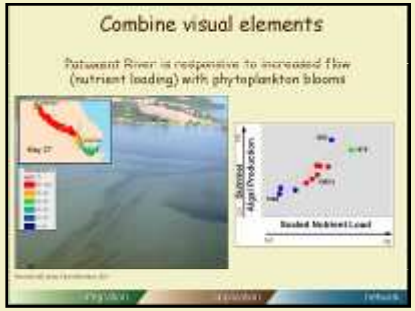


Outline

- Preparing your presentation
  - Communicating your message effectively



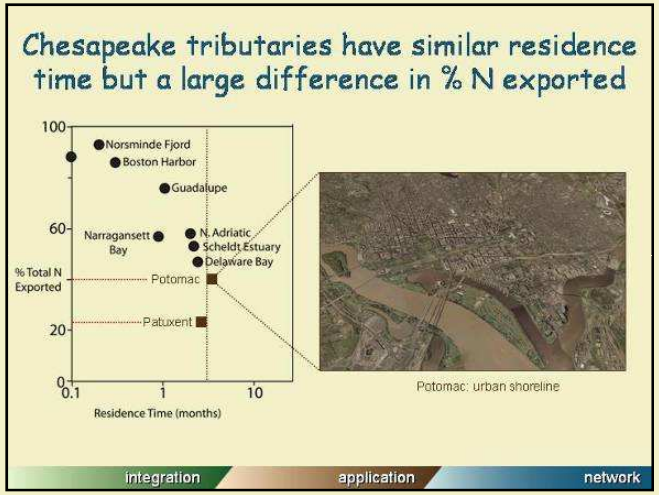
- Preparing good quality slides
  - Pitfalls
  - Hints and tips to maximize usefulness



- Presenting your talk

Presenting your talk

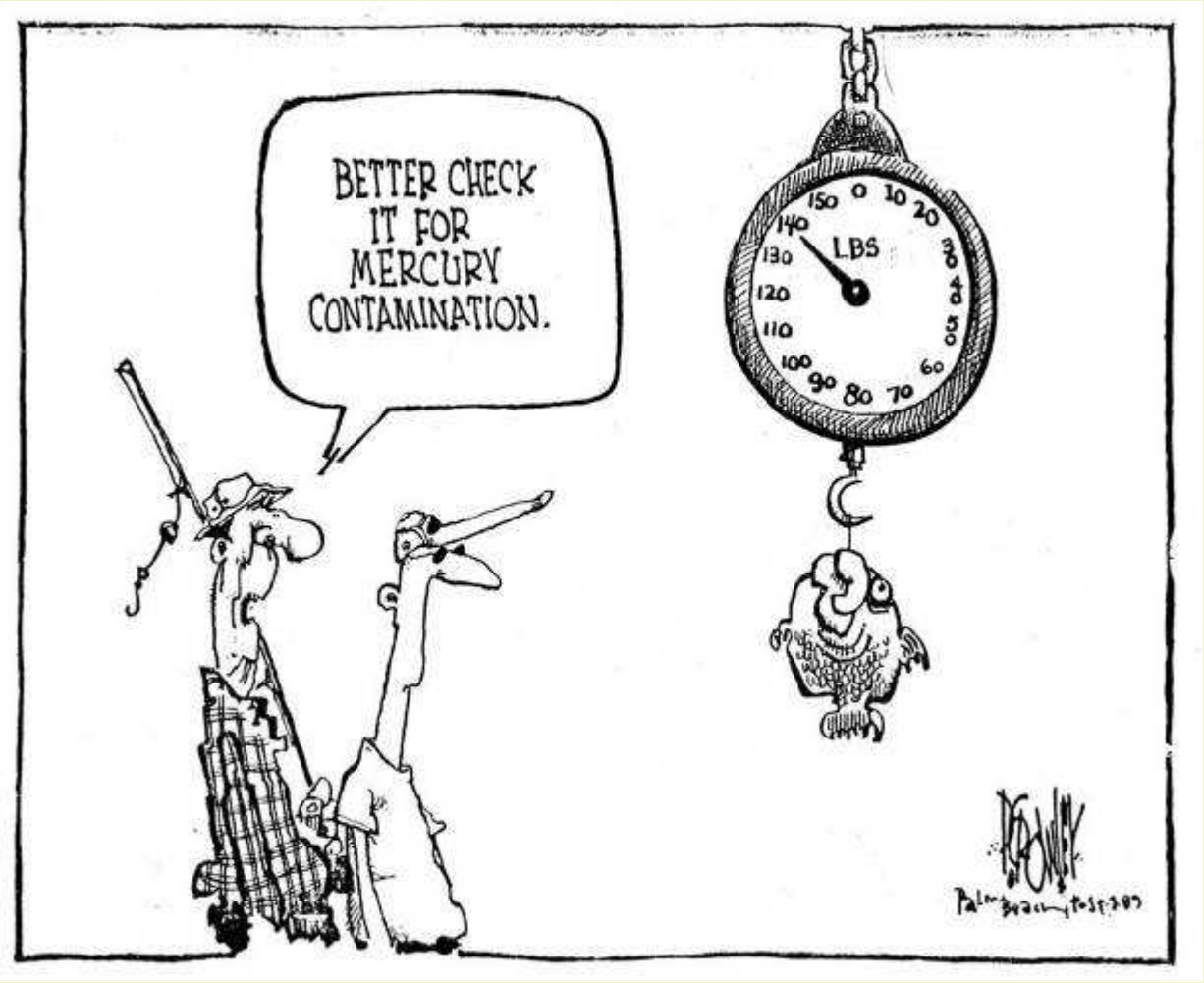
- Preparation is essential
- Arrive early to check equipment and greet audience
- Provide appropriate background
- Thoughtful transitions between points keeps your audience focused on your theme
- Orient the audience to each slide
  - Explain graph axes, photos, diagrams
- Be enthusiastic, and pace yourself
- Assess you audience and situation and respond if necessary



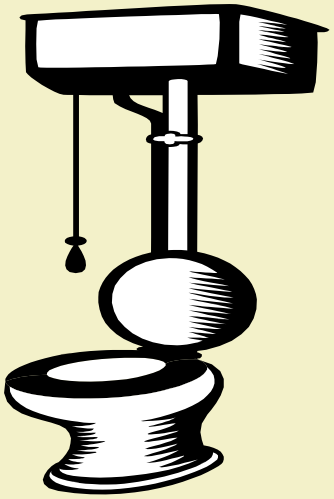
You are giving a talk, NOT reading a speech

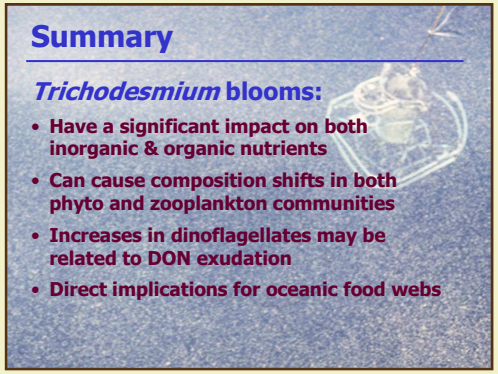
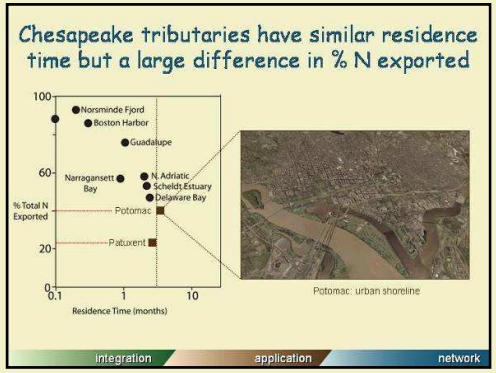
- Text can be used to:
  - *Remind* speakers of the key points of the talk
  - *Provide* the audience with enough information to interpret graphics
- Text should NOT be used to:
  - *Distract* audience from the speaker's words (people will read a new slide before listening to the speaker)
  - *Replace* the need for the speaker to talk by having a complete text provided on the slides

Topical humor can be effective



Acknowledgements
Thanks to all the people in the Moreton Bay catchment that contributed their nutrients to this study.



Summary

- Be well prepared
- Aim to impart only a few key points
- Use common structure for audience
  - e.g. title, introduction, methods, results, conclusions
- Use well prepared visual elements
- Invest time and effort into a quality presentation
  - You owe it to your audience
  - You owe it to yourself
  - Good slides / presentations can be reused many times!