HANDBOOK FOR EFFECTIVE, PROFESSIONAL COMMUNICATION

Faculty of Forest and Natural Resources Management

Undergraduate Education Committee

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This Handbook is adapted and excerpted from James M. Hassett, A Guide to Effective Communications: a Handbook for Forest Engineering Students (Syracuse: SUNY ESF, 2003).

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INTRODUCTION

Communicating with others is a part of everyday life. In large part, communication is about explicit language– speaking and writing words– but communication is also about implicit messages, such as tone, or eye contact. Learning to communicate effectively both implicitly and explicitly is a valuable skill for any professional. The Faculty of Forest and Natural Resources Management (FNRM) expects our students to communicate effectively and professionally. This Handbook sets forth the basic components of and considerations for effective, professional communication. It then explains methods for various types of communication: written, oral, and graphic.

Students come to ESF with a variety of skill sets and educational backgrounds. In addition, different professors have different expectations and guidelines depending on their courses or educational disciplines. The purpose of this Handbook is not to outline strict policies and procedures. Rather, the Faculty hopes to assist students in honing a variety of communication skills, and to provide a reference source to which students can refer in the absence of individual course or professor guidelines.

COMPONENTS OF AND CONSIDERATIONS FOR COMMUNICATION

What is effective, professional communication? To be *effective* is to produce the desired result. Thus, in terms of communication, *effective* means that the message intended to be sent by one person is indeed the same message received by another person. To be *professional* is to behave appropriately (with courtesy and respect) and competently (using proper methods and vocabulary). Communication can be professional, yet ineffective. You can speak courteously, but your ideas can be unclear: “Please send me the thing.” Communication can also be effective, but unprofessional. For example, you can confer the thought that something is agreeable by saying, “that’s cool, dude.”

The first consideration is which type of communication you will utilize to convey a message. Some additional factors to think about are the level of formality and detail, the importance, the time frame, and the necessity of a response. Do you have an important question that requires an immediate answer? Then a telephone call might be more effective than an e-mail. Do you want to send out notification of an event? The variety of the individuals you are inviting will determine the details: date, time, place; or, perhaps, directions. The next consideration is a set of components called the rhetorical situation: author, audience, purpose, topic, occasion.[1]

Author

Planning and preparing is part of the communication process. Whether you are authoring a presentation or a paper, you should consider your needs as an author, such as your work habits and your style. You may work best in a quiet environment or be most productive when you have uninterrupted, large time blocks to compose your work. Your instinctive style may be personal, informal, humorous, and open. But some communications require detachment, objectivity, and formality. Knowing your style and being able to edit and adjust to a particular situation is essential to effective communication.

Audience

The level of formality and intimacy are also determined by the recipients of your communication: your audience. You will communicate differently to a friend (very personally and informally, using slang or jargon) than you will to the reader of a report, or to your classmates in a presentation. You would not necessarily define technical terms when presenting to classmates, but you might have to define "ecosystem management" if you were sharing your college learning experience with the family over Thanksgiving dinner. Thus vocabulary is one of the considerations relative to your audience.[2] Vocabulary can also embody tone. Tone is the attitude you convey to your audience, and is another consideration. You might employ anger and sarcasm when arguing with a parent, but you would not want to use this tone with a professor. Stating, "I need a drop slip signed" carries an authoritative tone, and can be interpreted as discourteous. "May I please have another copy of the syllabus?" conveys a more professional tone.

One way an author expresses tone, formality, and professionalism is through point of view. This Handbook utilizes second person: "you should cite your sources" or "cite your sources" ('you' is implicit, or understood). Second person is considered by some to be informal, and therefore might be inappropriate in certain

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[1] Robert Keith Miller and Suzanne S. Webb, *Motives for Writing*, Second ed. (Mountain View: CA: Mayfield Publishing Company, 1995) 2-7.

[2] You should also learn the vocabulary of your discipline and expand your vocabulary throughout your college learning. When you come across a word in a reading assignment or in research that you are not familiar with, look it up in the dictionary.

professional written communication, such as a scientific report. This Handbook is framed as congenial communication from the Faculty to our students, almost speaking directions (as in a syllabus), so second person works well. First person is "I," or "we." Using "I" or "we" can be personal but more formal. But in some instances "I" is too personal, and does not give the impression of objectivity. Third person can be formal and objective, such as the pronoun "one," but can be perceived as overly formal, distant, and even pretentious: "one should always cite her sources." Third person point of view also employs the pronouns "he," "she," "they," or the name of a subject, which can be professional and objective.

Another consideration in point of view is gender neutrality. Using gender neutral language prevents stereotyping and bias. Although it used to be acceptable to say "man settled the American continent," it is now preferable to say "humans" or "people." Typically, the accepted singular pronoun is "he" because the English language does not have a generic (non-gendered) first person singular pronoun. Repeated use of the male pronoun, however, can be perceived by some to be biased. One way to avoid this, is to use both pronouns ("he or she") or to alternate between these pronouns in subsequent sentences. Another way to avoid gender bias is to use plural pronouns: their, they, them. When using plural pronouns, you must use a plural noun: foresters utilize their measurement skills. To write 'the forester uses their measurement skills is incorrect, because "forester" is singular and "their" is plural. Many who attempt gender neutral language end up making this grammatical error. Below is a table of pronouns to help clarify point of view and pronoun usage.

	Singular Pronouns	Plural Pronouns
first person	I, my, me, mine,	we, our, ours, us
second person	you, your, yours	you, your, yours
third person	it, she, he, her, him, its, hers, his	they, them, their, theirs

Purpose

You should also consider your objectives in any given communication. Do you want to persuade, or amuse, or inform? Your motive will frame the vocabulary, language, and tone you use to communicate. Purpose, then is integrated with author and audience in that you must assess the appropriate motive. You may be asked to give a formal, informative presentation in class. In that situation, amusing your audience with jokes or sarcasm is neither professional nor effective communication.

Topic

Your topic is the specific area of a particular subject that you choose to communicate to your audience. To be effective, you should clearly reveal your topic to your audience early in the communication process– either in the opening of a presentation or first paragraph of a paper. You convey your topic in your thesis and in your statement of purpose. The thesis is the one main idea you are communicating. A statement of purpose is the general flow of the information you are providing. Consult the following online resources for writing a thesis statement and statement of purpose.

Online Guides to Writing a Thesis Statement

Indiana University Bloomington Writing Tutorial Services ~ How to Write a Thesis Statement.
http://www.indiana.edu/%7ewts/pamphlets/thesis_statement.shtml

University of Wisconsin Madison Writing Center ~Developing a Thesis Statement
http://www.wisc.edu/writing/Handbook/Thesis.html

University of Wisconsin Madison Writing Center ~Thesis and Purpose Statements
http://www.wisc.edu/writing/Handbook/Thesis_or_Purpose.html

Occasion

The occasion considers the circumstances prompting a communication. The way you write an answer to an essay question on an exam is different that the way you would write when composing a research paper that is due later in the semester. You may be asked to say a few words accepting an award– an entirely different occasion than when you participate in a class discussion, or send out an invitation to tail-gate before a football team. Thus, the occasion is one more consideration for the level of formality, the purpose, and the tone.

WRITTEN COMMUNICATION

There are several types of written communication discussed in this section: electronic mail, memoranda, letters, reports and papers. Professionalism and effectiveness in written communication depends on choosing the best type by which to express a subject, and then following basic guidelines for conveying your message to the recipient.

Electronic Correspondence

Electronic mail, or e-mail, is appropriate for short, rapid communications. It is not effective for conveying large amounts of information or complex information. Because e-mail is quick and easy, it is sometimes mistakenly considered informal. And certainly, when you correspond with friends, informality is acceptable. But in other circumstances, e-mail should be formal and professional. Below are some general considerations for professional e-mail correspondence and etiquette.[3]

- Consider the audience and occasion, and avoid informality and jargon
- Use a courteous tone in your message; avoid provoking misunderstanding or anger by being too abrupt
- Indicate the subject of the message
- Greet the addressee appropriately
- Organize your thoughts and communicate them clearly and concisely
- Keep e-mail messages brief and to the point
- Use proper English, grammar, and spelling; proofread before sending
- Sign your name to the message
- Read messages you receive carefully before responding
- If you need time to compose a reply, send a brief message acknowledging receipt and communicating when you intend to respond in full

Example of an Unprofessional E-mail

From: esfstudent@mailbox.edu
To: facultymember@esf.edu

i need a drop slip to dorp my class but you were'nt in your office before. when will you be around?

[3] Adapted from James M. Hassett, A Guide to Effective Communications: a Handbook for Forest Engineering Students (Syracuse: SUNY ESF, 2003), citing the Radcliffe Institute at Harvard University. The full list is available at Paul Chapman, Head-Royce School, Oakland, CA. http://ns.headroyce.org/~pchapman/email.html; citing Email Committee. Email Etiquette. Radcliffe Institute. May 29, 2002. http://www.radcliffe.edu/rito/tips/email/etiquette.html. (*web link inactive*).

Example of a Professional Polite E-mail

From: esfstudent@mailbox.edu
To: facultymember@esf.edu
Subject: advisee dropping a class

Hello Dr. Forest,
I would like to drop one of my classes. Do you have a convenient time today when I may stop by your office for your signature?
Thanks,
Nice Student

Memoranda

A memorandum, or memo, is used to communicate specific information, usually within a department, or organization. It is more formal than an e-mail, and can be used to transmit more information– up to a page or two. Still, the information you convey should be relatively straightforward and uncomplicated. Below are some general guidelines for memos.

- Format a memo with To, From, Date, and Subject (or Re:) lines
- Use proper English, grammar, and spelling
- Use a courteous, professional tone
- Be clear and concise
- Clearly state if a reply or other action is required or requested
- Print the memo on letterhead or a word-processing memo template

Example Memorandum

Faculty of Forest & Natural Resources Management

320 Bray Hall

To: Dr. Chad Dawson, Chair

From: Dr. Sarah Vonhof *SV*

Date: April 1, 2006

Re: Communications Handbook

Please find attached the draft FNRM Communications Handbook. The Undergraduate Education Committee believes that this will be a valuable tool for our students.

We welcome comments and suggestions. Please review this draft, and send us your feedback before April 30th, so that we may present this to the faculty for consideration.

Letters

Letters are the means of formal, professional communication with others outside an organization. Sometimes, letters are used within an organization to formally present a secondary document, such as a committee report. Letters can convey more detail than a memo, and should always be used to introduce a resume. Below are general guidelines for drafting a letter as well as an example business letter.

- Format a letter with the complete address of the recipient
- Print the letter on letterhead, or compose a header with the sender's complete address and contact information
- Use a formal greeting, such as "Dear" or "To whom it may concern"
- Organize the information, and be clear and concise
- Include a formal closing, such as "Sincerely" and sign and print your name

Example Business Letter

esf State University of New York
COLLEGE OF ENVIRONMENTAL SCIENCE AND FORESTRY

Graduate Enrollment Management Center
Syracuse University
303 Bowne Hall
Syracuse, NY 13244

November 11, 2004

Re: Letter of Recommendation for Mr. Good Student, M.S. Applicant

To whom it may concern;

It is with great pleasure and utmost confidence that I recommend Mr. Good Student for graduate studies at Syracuse University.

I have served as major professor for Mr. Student for two years, and have been impressed by his responsible nature. He is enthusiastic and motivated about learning. He exhibits good self-discipline, as well as good organizational and time management skills. Mr. Student's academic performance at SUNY-ESF is outstanding. He has maintained a 3.8 grade point average while working a part time job.

Mr. Student sets goals and achieves them. He undoubtedly has the intellect, skills, temperament, and perseverance to excel in graduate work at Syracuse University.

Please feel free to contact me with any questions.

Sincerely,

Sarah Vonhof

Dr. Sarah Vonhof
Faculty of Forest and Natural Resources Management
315.470.6594
slvonhof@esf.edu

One Forestry Drive ■ Syracuse, New York 13210-2778 ■ http://www.esf.edu/

Reports and Papers

One of the most frequent forms of written communication that you will use to complete assignments in your courses is the report or paper. The format for particular assignments will often be given by a professor, but below are the basic elements of a report and guidelines to follow for writing a paper. Also see the section on Citation.

Basic Components of a Report

- Introduction
- Literature Review
- Methods and Materials
- Results
- Discussion
- Conclusions
- Bibliography

General Guidelines for Writing Papers

- Use one inch margins, 12 point font, double-line spacing, and page numbers
- Avoid second person and passive voice[4]
- Spell-check, grammar-check, and proofread (Spell check alone is insufficient! For example, "Magellan circumcised the glob"[5] does not contain spelling errors, but is certainly not the intended communication).
- Organize your thoughts by preparing an outline before writing
- Start a paper with an introduction and end with a conclusion
- Cite your sources internally, and include a works cited and/or bibliography in proper format (see the citation section of this handbook)

ORAL COMMUNICATION

Oral communications include simple telephone calls, interviews for class projects or research studies, and informal and formal presentations. Having a clear idea of what you want to say or ask is essential to effective oral communications.

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[4] Second person is the use of "you." See the discussion of point of view in Audience on page . Active voice is preferable to passive voice because it identifies the subject and can be concise. These sentences are in active voice: "The President promulgated an Executive Order." or "John threw the ball to Tim." In passive voice, the subject receives the action, and can be less clear and less concise. Here are the same sentences in passive voice: "An Executive Order was promulgated." "The ball was thrown to Tim." Passive voice is not always avoidable, but grammar-check programs can help edit sentences to active voice.

[5] From Henriksson, A., comp., *Non Campus Mentis: World History According to College Students* (New York: Workman, 2001).

Telephone Conversations

Telephone contact between forest and natural resource managers and the general public or client groups is very common. Throughout your career, you will need to answer incoming telephone calls politely, even when conversing with a disgruntled individual. When contacting other individuals by telephone, consider these steps.

- Prepare a list of questions to ask the person you are contacting prior to making the phone call
- Always clearly identify yourself and your affiliation.
    - Example: My name is ____________. I am a student at the SUNY College of Environmental Science and Forestry in Syracuse.
- State your purpose for calling.
    - Example: I am working on a project for my forest management class, and was wondering if you could provide some input for this project based on your experience as a forest manager.
- Ask your questions clearly without interrupting the person you are talking to, and take notes on the conversation.
- Thank the person for his or her assistance.
- Be prepared to leave a message in case the person is not available. When leaving a message on an answering machine, clearly state your name and, speaking slowly, include your phone number and the purpose of your call. Also indicate if you will be calling the individual back or if you'd like him/her to return your call.

Interviews

Often interviews are required for class projects or qualitative research studies. If you plan on conducting a qualitative research project, coursework in qualitative research methods will be necessary. Because of the complexity involved in conducting qualitative research interviews, this section of this manual will discuss conducting an interview for a class project only. Some guidelines for conducting basic interviews for class projects follow.

- Understand the benefits of telephone versus in-person interviews. Telephone interviews are especially useful when distance prevents you from interviewing in person. In person interviews often provide more detailed information because of the more-personalized contact between you and the interviewee. Choose the form that is best based on project requirements and travel limitations.
- Use an interview guide (i.e., a list of questions to be used during the interview). An interview guide will help you keep the conversation focused and will prevent you from forgetting any important questions. Make sure the questions apply to the interviewee's personal experience.
- Always introduce yourself and the purpose of the interview.
- Let the interviewee know the purpose for which you will be using his/her comments.
- Obtain permission to conduct the interview. If you plan on tape recording an interview, always ask permission *before* turning on the tape recorder, then ask permission *again*

once the tape is recording. Let the interviewee know that he/she can stop the interview at any time.

- Always thank the interviewee at the end of the conversation.
- Always send the interviewee a copy of any reports resulting from the project.

Presentations

Presentations can either be informal (for example, a class presentation or a short presentation at a meeting) or more formal, such as a presentation at a workshop or conference. Similar guidelines apply to both types of presentations. Both general guidelines and guidelines specifically for Power Point and overhead projector presentations are included below.

- Know your audience. Understanding the interests of your audience is essential to understanding how to focus your presentation. Speak to the interests and educational level of your audience.
- Dress appropriately. Dressing appropriately for your audience can help to connect you to your audience. For example, dressing in a formal suit for an audience of foresters may create a psychological barrier between you and your audience. In this instance, casual but neat attire may make you more approachable to your audience. For formal conference presentations, a suit may be more appropriate. If you are unsure about the dress code for an event, ask someone who has attended a similar conference or meeting before.
- Carefully structure your presentation. Your presentation should be well organized and include the following:
    - a title slide that shows your name and the title of your presentation,
    - the body of information you are presenting, and
    - a clear conclusion that summarizes your presentation (never end with “that’s it.”)
- The information on the slides should be presented in a logical order, beginning with basic concepts and leading into more detailed information towards the end of your presentation.
- Practice your presentation. Practicing your presentation beforehand is always a good idea. Have a friend or family member watch your presentation. Ask him or her to let you know if you have any mannerisms (e.g., saying “ummm” frequently, turning your back to the audience, etc...) that you need to eliminate, or if any of the concepts presented do not make sense. Practicing will also allow you to identify any portions of your presentation that do not flow properly and that need further work.
- Know the time limit for your presentation. Most class and conference presentations have a time limit that is strictly enforced by an instructor or moderator. Make sure that your presentation does not go beyond this time limit. Timing your presentation beforehand will clarify if you need to cut back on the amount of material presented.
- Stimulate audience interest. There are several ways that a presenter can increase the audience’s interest in the presentation.
- Use visual media when appropriate. For panel presentations, visual media are often not used. For most other presentations, however, providing a visual aspect to your presentation can be extremely effective in maintaining audience interest in your topic.

See the “Guidelines for Power Point and Overhead Projector Presentations” below for suggestions on creating effective visual presentations.

- Always speak enthusiastically (never in a monotone).
- Get the audience involved in your presentation. Asking the audience questions and bringing in examples of items that can be passed around (e.g., field equipment or publications) are two ways to get the audience involved.
- Call for questions after your presentation. Once you have concluded, ask the audience members if they have any questions for you. Never put down or downplay the importance of any question, as this will discourage others in the audience from asking questions. Never argue a point of view during a question and answer period; just state your response and end it there. Finally, if you do not know the answer to a question, admit it. You can always say that you don’t know the answer at that time but can find out the answer and respond to the audience member later with the information.

Guidelines for PowerPoint and Overhead Projector Presentations

- Know what is needed to transfer your PowerPoint presentation to the conference projection system. PowerPoint has become commonly used both in class presentations and at conferences. Before speaking in a class or conference, however, know what type of disk can be used to transfer your presentation to the computer projection system. For example, some conferences enable computer access by CDs and flash drives only; you will be out of luck if you bring a zip drive. Always bring a backup copy of your presentation on a second disk and in hardcopy as well.
- Keep your slides simple. This means limiting the amount of text on each slide to 20 words or less when possible, and using photos or illustrations in place of text when possible. Also, limit the number of photos per slide. Avoid using complex images or photos as the background images of slides as these images will make it difficult for the audience to read any overlying text. Make sure that the font color you choose contrasts adequately with the background color of the slides. Never use a detailed table in a presentation; present the highlights of the table only. Also avoid “busy” diagrams or illustrations.
- Don’t read your slides to your audience! Presentations become extremely boring when speakers simply repeat everything, word by word, that is on their slides. Include only keywords on your slides; keywords will help guide your presentation while preventing you from reading your slides.
- Keep the appearance of slides consistent throughout your presentation. Using different colored and sized fonts can help emphasize key words and titles in your presentation. However, it’s important to keep your use of font sizes and colors consistent throughout the presentation.
- Use large font sizes. Overall, large font sizes should be used for both slide titles and text. The font used for titles should range from 36 to 48 point. Text size should be smaller than that used for titles and should range from 32 to 24 point. Captions can range from 24 to 18 point in size. Avoid using text that is all capitalized or italicized, as these options also make the text more difficult for the audience to read.

- Bullet items on slides. Bulleting makes text easier for your audience to read. If you wish, bulleted items can also be highlighted in another color or dimmed after they are shown using the “custom animation” feature in PowerPoint.
- Speak to your audience – not the projection screen. Looking at the computer monitor rather than the projection screen will keep you facing forward. Make sure the monitor is set up so that you are facing the audience while viewing it.

GRAPHIC COMMUNICATION

Forest and natural resource managers use various forms of graphics to assist in communicating their ideas and concepts. We present here some guidelines to consider in preparing graphics for your written and oral communications. In every case, a good general rule is that the table, graph, or map should have enough information to be understood if removed from the larger report.

Tables

A table is a convenient way to present data. Separate tables (numbered in the order of their first appearance) should be used for all but the simplest tabular material. Every table should have an informative title, which should make the tables intelligible without reference to the text. Rows and columns should be clearly identified. Most word processing packages have utilities to construct tables, and with a little practice a table can be customized by merging cells, using a combination of no, regular, or bold lines, changing column widths, etc. See Table 1 for an example.

Example Table

Table 1. Year-by-year weight of world champion pumpkins: 1979-2005.

	Decadal pumpkin weight			
Year	1970s	1980s	1990s	2000s
	- pounds per fruit -			
0	NA	459.0	816.5	1140.0
1	NA	493.5	780.5	1262.0
2	NA	445.0	827.0	1338.0
3	NA	481.0	884.0	1385.0
4	NA	612.0	990.0	1446.0
5	NA	531.0	968.0	1465.0
6	NA	671.0	1061.0	1469.0
7	NA	604.5	977.0	NA
8	NA	633.0	1092.0	NA
9	438.5	755.0	1112.5	NA
Average	438.5	568.5	950.9	1357.9

NA -- not available

Graphs

A graph is simply a device to present data. Various types of graphs are utilized to convey various date. The table below provides guidelines for choosing the best graph to illustrate your data.

Data requirements for common graph types

EXCEL Graph Type	Dependent Variable (Y axis)	Independent Variable (X axis)
column	continuous	discrete/category
bar	discrete/category	continuous
line	continuous	discrete/category
pie	continuous (size of slices)	discrete/category (# of slices)
area	continuous	discrete/category
scatter	continuous	continuous

For each type of graph, there are rules to ensure accurate data portrayal. Consider the data set presented in Table 1, and the following example graphs that use the data.

Examples of Ineffective Graphs

Figure 1 was generated in Microsoft Excel using default choices from the Chart Wizard feature. The graph may seem attractive, but is deficient for several reasons. First, the horizontal and vertical axes do not have labels, and the Series 1 box is not necessary. These are corrected in the next figure.

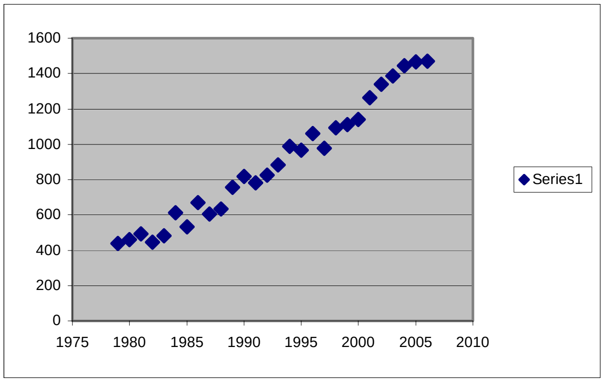


Figure 1

Figure 2

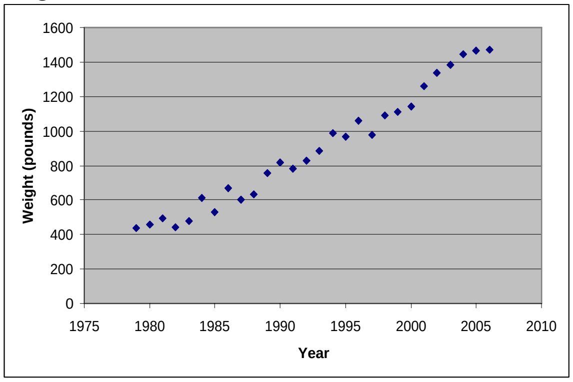
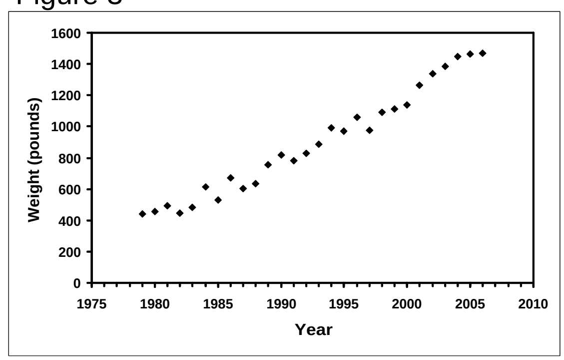


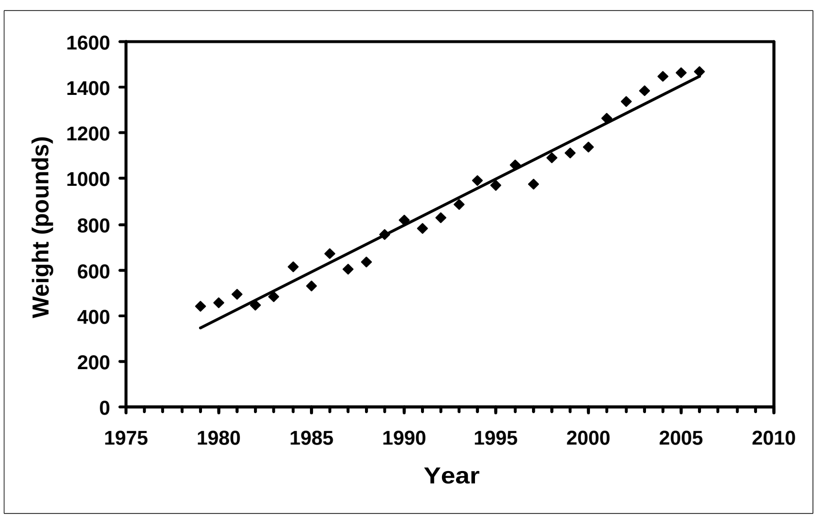
Figure 2 has the axes labeled and the Series 1 box removed. However, the horizontal axis does not include all the intervals, box lines and tick marks are too narrow, the weight and size of fonts for the axis titles are too small, and both the horizontal lines across the figure and default shaded background are unnecessary. These are corrected in the next figure.

Figure 3 is in final form except for a lack of a descriptive title. Also, it is generally useful to add a trend line via regression analysis to convey the precision of the data and allow for prediction (when will the world champion pumpkin exceed 2000 pounds?).

Figure 3



Example of an Effective Graph



Note that this graph represents the data appropriately, is numbered, has a caption, and labels for both axes.

Figure 4. World champion pumpkin weights from 1979 to 2005. The regression curves represents the equation: y = -80281 + 0.742x, R^2 =

Tufte has written three books devoted to display of quantitative information.[6] The following "principles of graphical excellence" are adapted from his first volume.

- Graphical excellence is the well-designed presentation of interesting data – a matter of substance, of statistics, and of design.
- Graphical excellence consists of complex ideas communicated with clarity, precision, and efficiency.
- Graphical excellence is that which gives the viewer the greatest number of ideas in the shortest time with the least ink in the smallest space.
- Graphical excellence is nearly always multivariate.

Maps

Why use a map? A map is a spatial method of communicating information about a project, process, travel route or idea. The key word is **spatial**: how something is distributed in space or how you get from location A to location B. Getting from A to B can be described either through a map or through a set of steps, as anyone who has used MapQuest or Google maps knows. For some people, the map showing the route is a more effective way to communicate than the step-by-step instructions. Some spatial information is just best communicated with a map, and, depending on your audience, a map can provide effective context.

There are several elements required for effective, professional maps. These are illustrated in the example maps following the descriptions of map elements.

Map Elements

- Border. You should enclose a with a border to tie all the elements of the map together.
- Title. The map title should be in large type and perhaps a different font. This gives your audience an initial idea about the subject of the map.
- Neatlines. Various elements of the map, in particular the graphic map itself, may have a neatline surrounding them. In both example maps there is a neatline around the textural material, and in Map B the legend is surrounded by a neat line.
- North Arrow. If the North Arrow is not present, N is assumed to be straight up the page. Although placement of the North Arrow is a graphics choice, providing this feature may eliminate questions.
- Legend. A legend is usually required with any map. However, Map A is so simple that a legend is not required. If you use a legend, you should *only* list the features actually in the map. File names of features used in the mapping software should not be used. You should edit the legend so it makes sense. Since the viewer's eye travels across your map

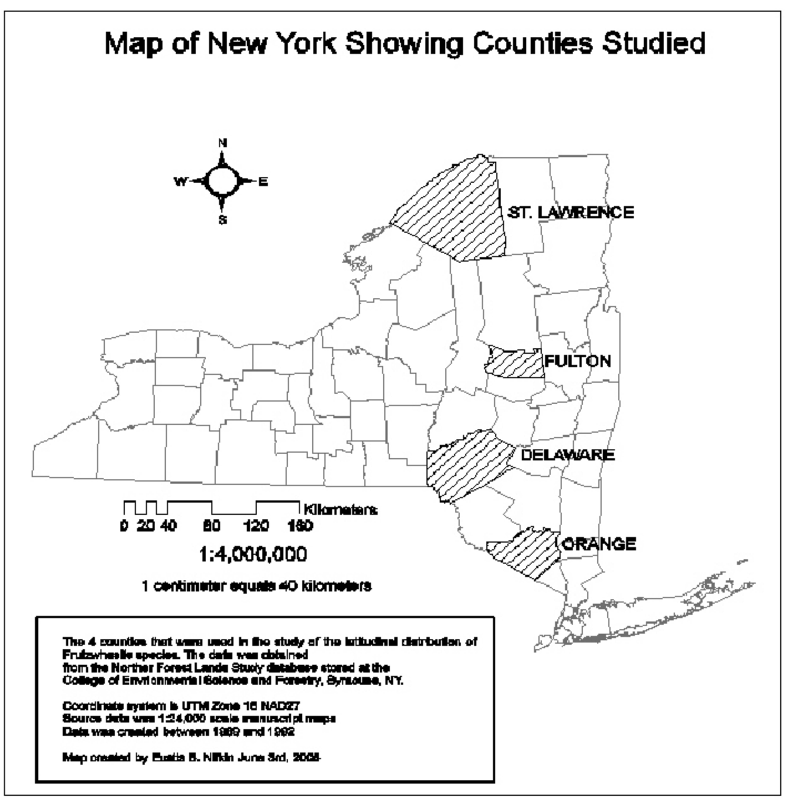
[6] Edwin Tufte, *The Visual Display of Quantitative Data* (Cheshire, CT: Graphics Press, 1983); Edwin Tufte, *Envisioning Information* (Cheshire, CT: Graphics Press, 1990); Edwin Tufte, *VisualExplanations* (Cheshire, CT: Graphics Press, 1997).

from upper left to lower right, good practice requires that the legend then be in the lower right hand side of the map (see Map B). This is not always possible, however.

- Scale. You must include a graphic scale bar and/or the mathematical scale. The verbal or textural scale (1 inch = 1 mile) should not be used because if the map is copied the verbal scale will no longer be correct.
- Text boxes. These describe the purpose of the map and any other information important for the viewer to understand the map.
- Metadata. Metadata is data about data. You should include the Projection or Coordinate system used. Coordinate system notations must include the Datum (like NAD27, NAD83, etc.) and the zone number. For example for Universal Transverse Mercator in central NY the notation is UTM Zone 18 NAD27 (or NAD83) and for a State Plane coordinate system the notation is SP Zone 1842 NAD83 (or NAD27).
- Balance and white space. The map should be balanced so that it does not visually “fall over”. This is really a judgment call on your part. White space is another artistic property of a map. A map with too little white space appears crowded, while a map with too much white space is not well tied together.

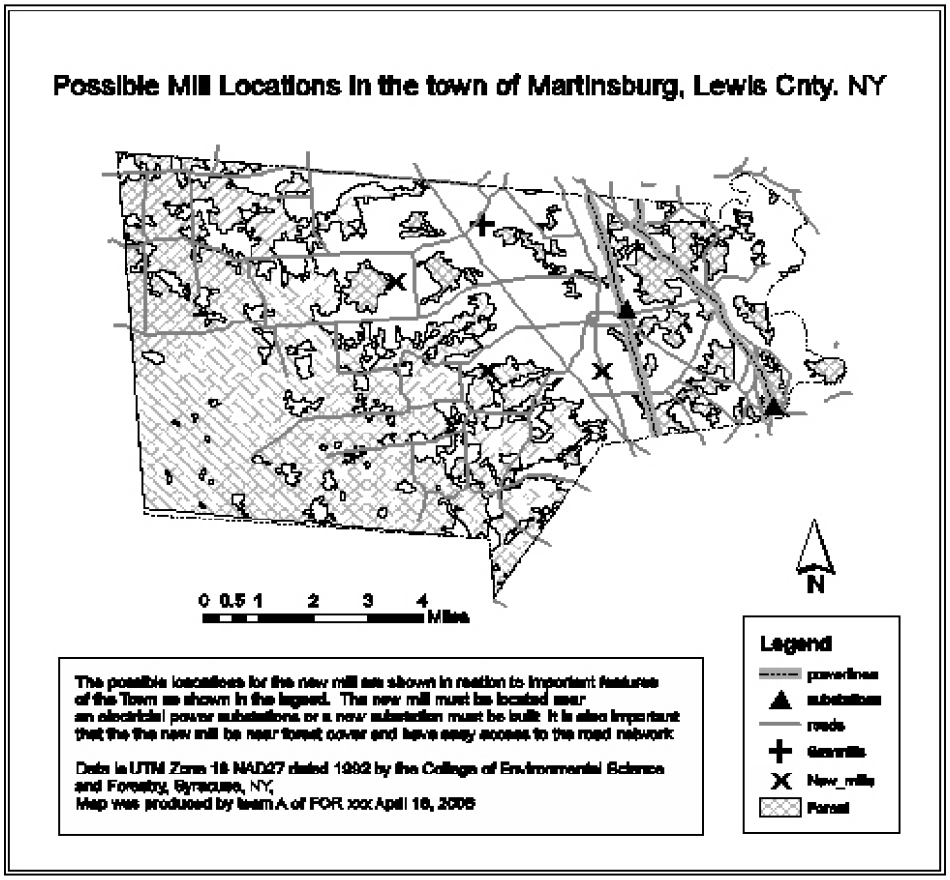
Example Maps

Map A shows the four counties that were used in a study. The map clearly shows the geographic position of the counties and the fact that they are spaced more or less uniformly in a North-South direction over the eastern half of the state of New York. To further define the spacing and orientation of the 4 counties would take many more words that those used above but the map instantly and clearly makes the distribution of the counties clear.



Map A

Map B is a more complex map showing the relationship between existing power substations and power transmission lines to possible new sawmill locations. Since the ability to move raw material to the mill and finished products to market the road network is also important to understanding the problem of mill location. Also important is the location of forested land cover. The interrelationships between these variables is clearly evident in the map and would take many words to describe. Thus, the cliche– "a picture is worth a 1,000 words"– does sometimes hold true.



Map B

For more information on creating effective, professional maps, see Dr. Herrington's PowerPoint presentation on map composition.[7] Brewer's (2005) text on Designing better Maps and her color assistant web site (Brewer 2006) provide more information on map design.[8]

[7] Lee Herrington, "Map Composition" Online PowerPoint presentation (Syracuse: SUNY-ESF, 2006) http://www.esf.edu/FOR/HERRINGTON/557/557pps_05/557_05_Map_Composition.ppt

[8] Cindy Brewer, *Designing Better Maps: A Guide for GIS Users* (Redlands, CA: ESRI Press, 2005); Cindy Brewer and Mark Harrower, "ColorBrewer" (Penn State Univeristy, 2002) http://www.personal.psu.edu/cab38/ColorBrewer/ColorBrewer_intro.html.

CITATION

Citation is an integral component of formal, professional communication. Although perhaps most strongly associated with written work, citation is important in oral and graphic communication also. If you use a quotation when giving a presentation, or copy a graph onto a PowerPoint slide, you must credit the original author. Likewise, if utilizing a chart or table from a book within your paper, even if you have added some information, you must reference the original creator of that chart or table.

The purpose of citation is twofold. First, it references sources and ideas or words attributable to others and documents the research process. Second, it enables a reader to find the original work and words being referenced. If the author of a paper has paraphrased someone else's idea, the reader may want to see the original sentences. The reader might also want to consult the original source to understand the context of the a particular quotation. Thus, citation must provide all of the details necessary to find a referenced piece of literature.

Different disciplines employ various citation formats. For example, the humanities typically use footnotes, whereas the natural sciences typically use parenthetical references. Citations are utilized within the body of a paper and they are also listed at the end of a document in either a Bibliography or a Works (or Literature) Cited.[9] There are a number of accepted styles, such as Chicago, Turabian, Modern Language Association (MLA), and Council of Biology Editors (CBE). Different professors may provide various guidelines for referencing, just as different scholarly journals require different formats for their publications. Your primary objective is to be consistent and complete, and to learn the habit of referencing others' works. Generally, the Literature Cited is a list of alphabetized sources, single-spaced with hanging indentation, with one line between entries. Below are online guides to consult and follow in the absence of specific guidelines.

Online Citation Guides

A Research Guide for Students, by I. Lee ~ Various Styles
http://www.aresearchguide.com/styleguides.html

Purdue Online Writing Lab ~ MLA Style
http://owl.english.purdue.edu/handouts/research/r_mla.html#Handling

University of Wisconsin Madison Writing Center ~ Chicago Style
http://www.wisc.edu/writing/Handbook/DocChiWorksCited.html

[9] A Bibliography lists all sources consulted in the research process. A Works Cited lists only those sources referenced (quoted or paraphrased) in the report or paper.

Plagiarism

When you do not cite your sources, or keep close track of your research process, you run the risk of plagiarizing. Plagiarism is presenting someone else's ideas, work, or words as if they were your own. Plagiarism includes copying from a source without citing it, using the same words without using quotation marks (even with a citation), or improperly paraphrasing (re-wording) another's work. Always cite sources you consult. You must attribute words, ideas, interpretations, information, and knowledge that is not your own to the appropriate author or source.

The College does not tolerate academic dishonesty. The penalty for plagiarism may be a grade of zero for a particular assignment, or failure of a course. The ESF policies on academic dishonesty are covered in the *Student and Judicial Handbooks* and in *Academic Integrity @ ESF*.[10] Students are expected to read and understand these policies. Below are links to other web resources about plagiarism, even unintentional plagiarism (i.e., improper paraphrasing).

Online Resources

Avoiding Plagiarism. Purdue University Online Writing Lab. http://owl.english.purdue.edu/handouts/research/r_plagiar.html

Avoiding Plagiarism: Mastering the Art of Scholarship. University of California – Davis, Student Judicial Affairs. http://sja.ucdavis.edu/avoid.htm

Plagiarism : What It is and How to Recognize and Avoid It. Indiana University Bloomington, Writing Tutorial Services. http://www.indiana.edu/%7Ewts/pamphlets/plagiarism.shtml#wwwplagiarism

CONCLUSION

The Faculty of Forest and Natural Resources Management hopes that this *Handbook for Effective, Professional Communication* will be helpful to you in the variety of communication forms you will employ in your college work. Remember always that your professors are the ultimate guides, and you should consult them with specific questions for specific assignments.

[10] http://www.esf.edu/students/handbook/; *ESF Academic Integrity Handbook*. Office of the Provost. 2007. http://www.esf.edu/students/handbook/integrity.pdf

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Note: This Works Cited is in Chicago Style and formatted for a document with footnote references, not for a document with internal parenthetical author-date references

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University of California – Davis. Student Judicial Affairs. Avoiding Plagiarism: Mastering the Art of Scholarship. http://sja.ucdavis.edu/avoid.htm

University of Wisconsin Madison Writing Center. Chicago Style. http://www.wisc.edu/writing/Handbook/DocChiWorksCited.html

University of Wisconsin Madison Writing Center. Developing a Thesis Statement. http://www.wisc.edu/writing/Handbook/Thesis.html

University of Wisconsin Madison Writing Center. Thesis and Purpose Statements. http://www.wisc.edu/writing/Handbook/Thesis_or_Purpose.html