

เทคนิคการนำเสนอผลงาน แบบโปสเตอร์

ทำไมต้องออกแบบโปสเตอร์ให้ดี?

1. บุคคลทั่วไปเรียนรู้จากการดูภาพได้มากกว่าการอ่านจากข้อความ
2. การอ่านข้อความบนโปสเตอร์เป็นอุปสรรคทำให้ผู้ฟังขาดความสนใจอ่าน
3. สมาร์ทในการรับรู้ของคนค่อนข้างสั้น

Keep your poster visual

- โปสเตอร์ไม่ใช่บทความที่เอาไปแปะบนบอร์ด
- โปสเตอร์ควร “แสดงให้เห็น” ไม่ใช่ “บอก” ข้อมูล
- ตัวหนังสือใหญ่พอที่จะอ่านได้ชัดเจนจากระยะ 1-2 เมตร
- สะดุดตา สวยงาม เป็นระเบียบ ไม่รกตา
- เข้าใจได้ในเวลาสั้นๆ เสมือนเป็น “บทคัดย่อที่มีภาพประกอบ”

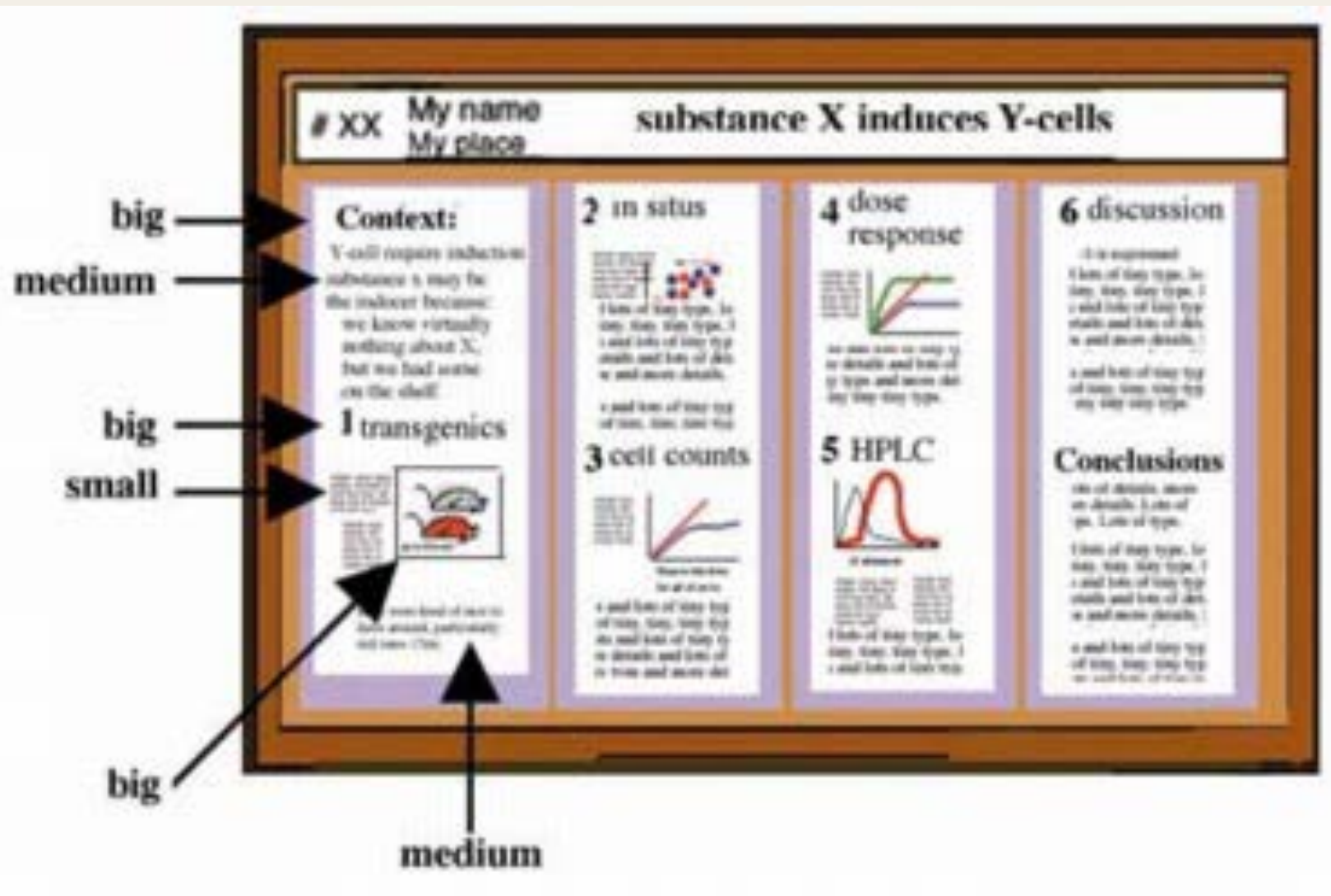
เตรียมการ

- ตรวจสอบขนาด (กว้าง x สูง)
- เลือกวัสดุที่เหมาะสม
- พื้นผิวเรียบ ไม่ขรุขระ ไม่ยับยู่ยี่
- ไม่เป็นเงา ไม่สะท้อนแสง
- พื้นสีอ่อน ตัวหนังสือสีเข้ม

Be focused

- กำหนดประเด็นที่ต้องการสื่อ ควรมุ่งเน้นเพียงประเด็นเดียว
- ภาพและเนื้อหาทั้งหมดสัมพันธ์กับสารหลัก
- ลดทอนรายละเอียดปลีกย่อย เพื่อให้สารหลักโดดเด่น
- (รายละเอียดต่าง ๆ สามารถให้เพิ่มได้โดยการพูดนำเสนอ หรือเอกสารแจก)

Layout - balanced



HEAD START

KNOW
Center

TEAM

2

MENDELEY

LIBRARY

Peter Kraker

Christoph Trättner

Kris Jeck

Stefanie Lindstaedt

Christian Schögl

IMPROVING ACADEMIC LITERATURE SEARCH

WITH OVERVIEW VISUALIZATIONS BASED ON READERSHIP STATISTICS

MOTIVATION OVERVIEW OF RESEARCH FIELDS

In science, information overload is NOT a contemporary problem. Science has been growing exponentially since its inception more than 400 years ago.

Therefore, it is usually quite hard to get an overview of a research field at the beginning of a scientific study.

One needs to work through long lists of search results and their references to build a mental model of the field.

Recent publications are often buried far down the list, because they have not received many citations yet.

OVERVIEW VISUALIZATIONS

Visualizations have been used to show subject similarity between papers.

Papers that have a higher subject similarity are displayed close to each other.

This allows for clustering of research areas.



PROBLEM WHICH MEASURE TO CHOOSE?

Content based: Research terminology is too fluent (undefined text)
Citations: stable over time but they take a long time to appear.

IN COME READERSHIP STATISTICS

With the advent of the web, readership statistics have become available.

Readership statistics...

...are available much earlier (Booktalk & Mubius 2005)

...provide a good coverage of top publications (de la et al. 2010)

...readership co-occurrences can serve as a measure of subject similarity (Jung et al. 2010)



DATA AND METHOD

utilization is based on data from the popular reference manager Mendeley

A publication has to be read at least 14 times by Mendeley users from the field of educational technology, leading to a total of 81 papers

These papers appeared in 3,414 user libraries with a total of 19,402 co-occurrences.



The visualization was created using multi-dimensional scaling (MDS) and hierarchical agglomerative clustering (HAC) on library co-occurrences

The areas were placed according to the mean position of their associated papers.

To uncluster the papers and move them into the correct area, we used a force-directed layout with a collision detection algorithm.

The areas were named by sending the paper titles to Zamanta and Open Calais.

RESULTS

Overview of Educational Technology Areas



Head Start follows the "Overview first, zoom and filter, then details-on-demand" concept popularized by Shneiderman (1996) to support exploration. The size of the bubbles signifies the number of readers of publications in that area. The closer two areas are in the visualization, the closer they are subject-wise.

Try it yourself!

<http://labs.mendeley.com/headstart>

EVALUATION

In a first evaluation, the visualization has been compared to 10 other analyses of educational technology literature. See right.

In comparison to citation analyses, the proposed visualization is more diverse.

Furthermore, the visualization is very recent compared to citation analysis:

80% of the publications included are from the last 10 years. Nevertheless, being based on the readers, their character may introduce biases to the visualization. Educational technology is an interdisciplinary field, but in Mendeley's discipline taxonomy it appears as a sub-discipline of education. Therefore, the map represents an education-dominated view. Areas that are mostly influenced by computer science such as adaptive hypermedia are missing.

See right for a comparison of the visualization to 10 other analyses of educational technology literature. See right for a comparison to citation analyses. Furthermore, the visualization is very recent compared to citation analysis: 80% of the publications included are from the last 10 years. Nevertheless, being based on the readers, their character may introduce biases to the visualization. Educational technology is an interdisciplinary field, but in Mendeley's discipline taxonomy it appears as a sub-discipline of education. Therefore, the map represents an education-dominated view. Areas that are mostly influenced by computer science such as adaptive hypermedia are missing.

CONCLUSIONS & FUTURE WORK

While readership statistics have previously been shown to be a good indicator of research impact, our visualization now shows that they can also be used to map scientific fields.

In comparison with quantitative literature analyses, it becomes apparent that our visualization covers many areas in the field of educational technology.

For a further evaluation, we are currently conducting expert interviews of the visualization with researchers from educational technology.

To overcome existing biases, we want to empower users to adjust and extend the maps. Thus, researchers would be able to use the visualization as an overview of their personal library, and to collaboratively build a view of a field. This is a discussion that we want to continue at WebSci'13 to get opinions of experts from other research fields. We hope to elicit feedback on the usefulness of the prototype, and how to overcome the aforementioned biases using collaborative construction techniques.



การนำเสนอข้อมูล

- ชื่อเรื่องตัวใหญ่ สะดุดตา น่าสนใจ
- ใส่ชื่อและที่อยู่ติดต่อของผู้นำเสนอเสมอ
- แบ่งเนื้อหาเป็นข้อๆให้อ่านง่าย
- ชื่อหัวข้อสรุปใจความสำคัญ
- ระบุวัตถุประสงค์ และข้อค้นพบของงานอย่างชัดเจน
- อาจใส่เลขกำกับแสดงลำดับการอ่าน
- ใช้ภาพ/แผนภูมิประกอบ
- แผนภูมิสองมิติ / รายละเอียดชัดเจน

Global sourcing shouldn't cost us the Earth




การนำเสนอข้อมูล

- ใช้จำนวนคำให้น้อย เน้นสื่อสารด้วยภาพ
- ใช้วลี แทนประโยคเต็ม
- ใช้ bullet ช่วยให้อ่านง่าย
- ใช้ศัพท์ง่าย โครงสร้างประโยคไม่ซับซ้อน
- ฟอนต์อย่างต่ำ 24 สำหรับเนื้อหา / 36 สำหรับหัวข้อ
- ใช้ฟอนต์ San-serif
- Contrast ตัวหนังสือ/พื้น
- ไม่ใช้สีหลายหลายเกินไป
- ไม่ใส่ภาพ/เนื้อหาแน่นจนเกินไป


Developing and characterising a novel combined nanoelectrode system

L. P. Robinson, A. Mount




Electrochemistry at nanoelectrodes

Nanoelectrodes have several advantages for electrochemical sensing.




Transport to macroelectrodes proceeds through a relatively inefficient linear diffusion profile. They are also highly affected by convection and ill drop.



In contrast, the diffusion pattern for nanoelectrodes quickly becomes hemispherical. This profile is much more efficient, and they are not so affected by convection or ill drop. They can reliably detect very low (attomolar) concentrations of analyte.

Ag/AgCl as a combined electrode



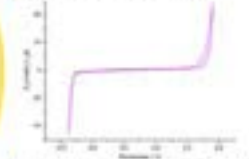
The combined reference/counter electrode is created by electroplating a thin film of Ag onto the Pt microsquare.

Potentiostatic plating causes Ag to grow preferentially at the corners, creating dendrites. A galvanostatic plating protocol is being developed to provide the required smooth, shiny Ag deposit.

To convert the newly plated Ag surface to AgCl, it must be functionalised. Chemical functionalisation by immersion in FeCl₃ has been shown to produce uniform deposits of AgCl.

Characterisation


Cyclic voltammetry and electrochemical impedance spectroscopy will be used to verify that the system is behaving as predicted. The nanoband should have a similar response to the current nanoelectrode array.



Example of a nanoelectrode cycling in 100nM AgCl solution. This cycle is used to determine the cleanliness of the electrode surface.

Combined nanoelectrode system

This design consists of a microsquare at the bottom of each cavity in the array, with the nanoband around the cavity edge.



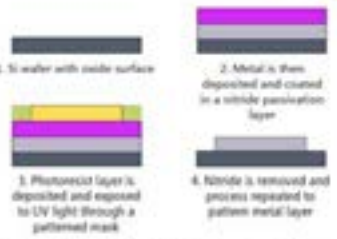
The Ag/AgCl microsquare is a combined reference and counter electrode. As its area is so much larger than the Pt nanoband, the current passing through the square is not large enough to affect its use as the reference electrode.

This could create an on-chip device for sensitive analytical detection.

Fabrication

This design has been fabricated at the Scottish Microelectronics Centre using photolithography. In this technique layers of metal and insulator are deposited and patterned to produce the desired arrangement.

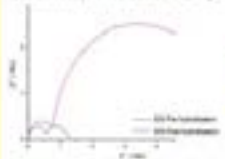
1. Si wafer with oxide surface
2. Metal is then deposited and coated in a nitride passivation layer
3. Photoresist layer is deposited and exposed to UV light through a patterned mask
4. Nitride is removed and process repeated to pattern metal layer



Each layer is deposited and patterned sequentially. This approach reliably produces uniform electrodes cheaply and easily.


An application

By coating the surface of the working electrode in a probe nucleic acid, the corresponding DNA sequence can be detected using electrochemical impedance spectroscopy (EIS). Before the target molecule is hybridised, the resistance measured for the redox couple is small. When the correct target is hybridised the resistance, and therefore the EIS response, is much larger.




EIS measurement of 50 nM electrode shows the increase in resistance upon addition of the target nucleic acid.

Pre hybridisation - the redox species has access to the electrode.



Post hybridisation - the access of the redox species is restricted, and so the resistance rises at the electrode.




Objectives

Having made the initial measurements, the next steps will include:

- complete fabrication of the combined system, including optimisation of nanoband and cavity dimensions
- further investigation of the sensitivity of nanoelectrodes for use in DNA sensing and the relationship between the response and concentration of the target
- optimisation of a galvanostatic silver plating protocol

Many thanks to Dr Damien Corrigan, Bika Srimuresu, Professor Andy Mount, the Mount group and the SMC for their continuing support and expertise.

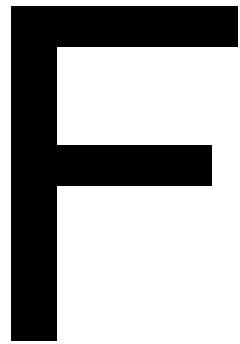




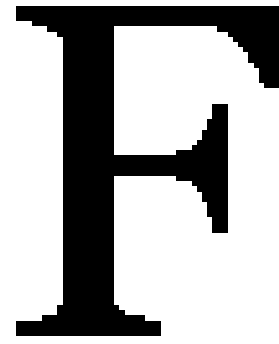
Serif



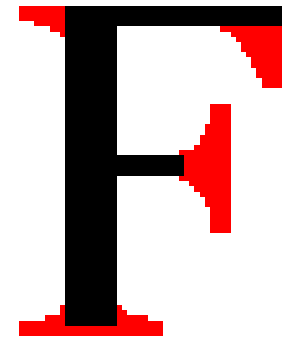
Sans Serif



Sans-serif



Serif



Serif
(red serifs)

■ ตรวจสอบ

- ตรวจสอบข้อผิดพลาด
- ลดเนื้อหา/ตัวหนังสือ
- วัตถุประสงค์/สารชัดเจน เข้าใจง่าย?
- มีบทสรุป

การบรรยายประกอบ

- ความยาว 2-5 นาที
- ไม่ควรอ่านโปสเตอร์
- เน้นประเด็นหลัก
- ความสำคัญของปัญหา
- วัตถุประสงค์
- วิธีดำเนินการวิจัย
- ข้อค้นพบ ประโยชน์ที่ได้/การนำไปใช้
- อาจมีเอกสารแจกและนามบัตร



Can Suburban Greenways Provide High Quality Bird Habitat?



George R. Hess :: NC State University :: Department of Forestry & Environmental Resources :: Raleigh NC 27695-8002 USA :: george_hess@ncsu.edu
Christopher E. Moorman, Jamie H. Mason, Kristen E. Sinclair, Salina K. Kohut :: NC State University :: Department of Forestry & Environmental Resources
www4.ncsu.edu/~grhess/GreenwaysForWildlife

Birds of Conservation Concern in Decline

- Many bird species of conservation concern – including neotropical migrants, insectivores, and forest-interior specialists – decline with increasing human development
- Greenways might mitigate this effect
- Habitat patch size, vegetation composition & structure, and landscape context are key factors
- Standards are lacking for designing and managing suburban greenways as high quality habitat

Objective: Greenways for the Birds

- Determine how development-sensitive forest birds are affected by
 - forested corridor width
 - adjacent development intensity
 - vegetation composition & structure
- Develop recommendations for greenway designers and planners

Study Design & Independent Variables

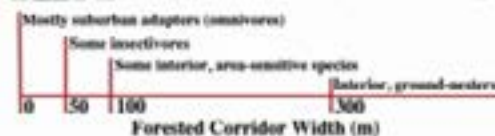
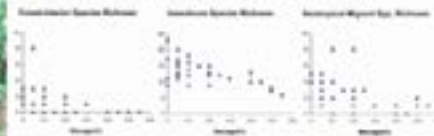
- Sampled 34 - 300m corridors in Raleigh & Cary, NC, USA
- Sampled range of
 - Forested corridor widths (20 - 1,200m)
 - Adjacent density (low density residential - office/commercial)
- Additional measures
 - Vegetation composition & structure in corridor
 - Land cover in 300m x 300m adjacent to corridor (context)
- Measured richness & abundance of
 - Breeding birds
 - Neotropical migrant birds during stopovers
 - Mammal nest predators



Breeding Birds of Concern More Common in Wider Greenways with Less Managed Area Surrounded by More Forest Canopy



- 8-minute, 50m point counts at center of corridor
- Revisited 4 times during breeding season



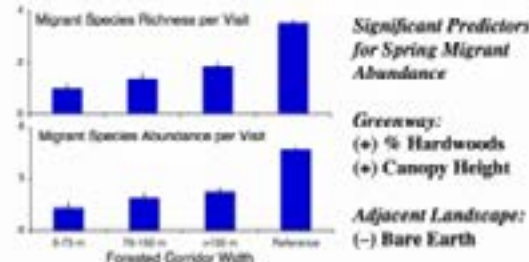
Significant Predictors for Breeder Abundance

Greenway:
(-) Managed Area
(+) Shrub Cover

Adjacent Landscape:
(+) Canopy Cover
(-) Building Density
(-) Bare Earth

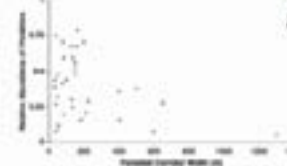
Spring Neotropical Migrant Stopovers More Common in Wider Greenways with More, Taller Hardwood Trees

- 200m x 25m transects along one side of greenway path
- Revisited sites for two spring seasons and one fall season
- Width not significant, but trend consistent with other findings



Nest Predators Less Common in Wider Greenways with Narrower Paths

- Five baited scent stations along each greenway segment
- Observed for 5 nights each



Significant Predictors for Predator Abundance

Greenway:
(-) Corridor width
(+) Trail width
(+) Mature forest
(+) Ground cover
(-) Vine cover

Adjacent Landscape:
(-) Building density

Greenways for Development-Sensitive Forest Birds Might Conflict with Intense Recreational Use

People & Managers Prefer ...



- Good for walking, running, cycling, strollers, wheelchairs
- Easier to maintain, especially with higher intensity use

Forest Birds Prefer ...



- Narrow path avoids splitting forested corridor
- Discourages heavy human use
- Fewer nest predators

Potential Solution: Wide Corridor, Trail Near Edge

- Make corridors at least 50m wide; wider is better
- Don't split forested corridor
 - Keep trails as narrow as possible
 - Avoid wide grassy areas along trails within forested corridor
 - Locate trails near the edge of forested corridors



Southern Flounder Exhibit Temperature-Dependent Sex Determination

J. Adam Luckenbach*, John Godwin and Russell Borski

Department of Zoology, Box 7617, North Carolina State University, Raleigh, NC 27695



Introduction

Southern flounder (*Paralichthys lethostigma*) support valuable fisheries and show great promise for aquaculture. Female flounder are known to grow faster and reach larger adult sizes than males. Therefore, information on sex determination that might increase the ratio of female flounder is important for aquaculture.

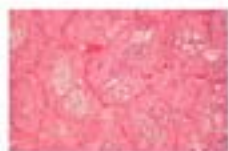
Objective

This study was conducted to determine whether southern flounder exhibit temperature-dependent sex determination (TSD), and if growth is affected by rearing temperature.

Methods

- Southern flounder broodstock were strip spawned to collect eggs and sperm for *in vitro* fertilization.
- Hatched larvae were weaned from a natural diet (rotifers/*Artemia*) to high protein pelleted feed and fed until satiation at least twice daily.
- Upon reaching a mean total length of 40 mm, the juvenile flounder were stocked at equal densities into one of three temperatures 18, 23, or 28°C for 245 days.
- Gonads were preserved and later sectioned at 2-6 microns.
- Sex-distinguishing markers were used to distinguish males (spermatogenesis) from females (oogenesis).

Histological Analysis

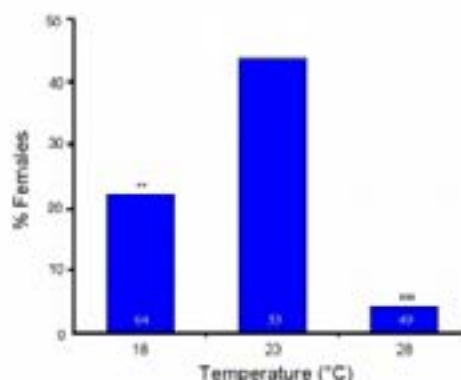


Male Differentiation



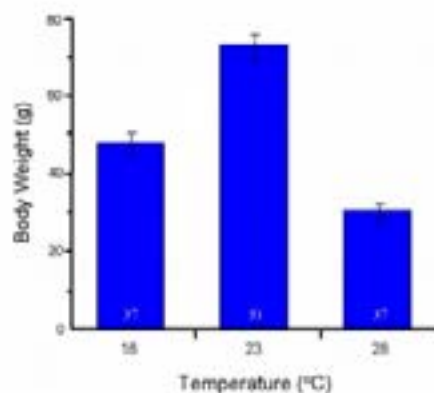
Female Differentiation

Temperature Affects Sex Determination

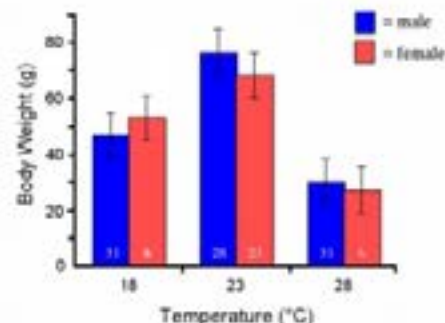


(**P < 0.01 and ***P < 0.001 represent significant deviations from a 1:1 male:female sex ratio)

Rearing Temperature Affects Growth



Growth Does Not Differ by Sex



Results

- Sex was discernible in most fish greater than 120 mm long.
- High (28°C) temperature produced 4% females.
- Low (18°C) temperature produced 22% females.
- Mid-range (23°C) temperature produced 44% females.
- Fish raised at high or low temperatures showed reduced growth compared to those at the mid-range temperature.
- Up to 245 days, no differences in growth existed between sexes.

Conclusions

- These findings indicate that sex determination in southern flounder is temperature-sensitive and temperature has a profound effect on growth.
- A mid-range rearing temperature (23°C) appears to maximize the number of females and promote better growth in young southern flounder.
- Although adult females are known to grow larger than males, no difference in growth between sexes occurred in age-0 (< 1 year) southern flounder.

Acknowledgements

The authors acknowledge the Substantial Kennedy Program of the National Marine Fisheries Service and the University of North Carolina Sea Grant College Program for funding this research. Special thanks to Les Ware and Beth Slings for help with the work.

Will Manatees Still Exist in 2100?

Effect of Cold Winters and Watercraft Accidents

Jun Yoshizaki, Biomathematics Program, North Carolina State University, Raleigh, NC 27695
Email: jyoshiz@unity.ncsu.edu

1. Introduction

In Florida, the populations of West Indian Manatees, listed as endangered species in 1967, appear to be growing in recent years. At the same time, the total number of manatee deaths is increasing rapidly. Therefore, it has become more important to evaluate the long-term viability of the populations. I hypothesized that cold stress due to cold winters and accidents with watercrafts cause additional mortality, and examined the population trends during the next 100 years.

2. Objectives

- Simulate manatee population trends during the next 100 years under the assumptions that there is additional mortality due to
 - cold stress only (temperature effect)
 - accidents with watercrafts only (boat effect)
 - both cold stress and accidents (combined effect)
- Investigate the relationship between the mean number of deaths due to watercraft accidents in each year and the probability of extinction within the next 100 years

3. Methods

- Model type: modified age based matrix model of female manatees
- Initial population size = 1600
- Mean boat collision deaths / year = 68 individuals
- Draw minimum temperature and the number of boat collision deaths in each year randomly from normal distribution
- Simulated 100 times for each model

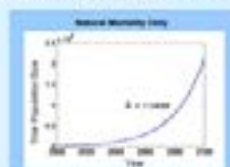
Basic Model Structure

$$\begin{pmatrix} N_1 \\ N_2 \\ N_3 \\ N_4 \\ N_5 \\ N_6 \\ N_7 \\ N_8 \\ N_9 \\ N_{t+1} \end{pmatrix} = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & f_1 \\ 0 & S_1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & S_2 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & S_3 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & S_4 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & S_5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & S_6 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix} \begin{pmatrix} N_1 \\ N_2 \\ N_3 \\ N_4 \\ N_5 \\ N_6 \\ N_7 \\ N_8 \\ N_9 \\ N_t \end{pmatrix} + \begin{pmatrix} B_1 \\ B_2 \\ B_3 \\ B_4 \\ B_5 \\ B_6 \\ B_7 \\ B_8 \\ B_9 \\ B_t \end{pmatrix}$$

where N = population size
 f = fecundity
 S = survival probability
 $= 1 - (\text{natural mortality} + \text{additional mortality})$
 B = # of boat accident deaths

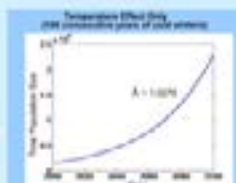
4. Results: Graphs of Population Trends

Model 1: No effect (natural mortality only)



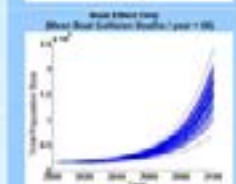
Without additional mortality, the manatee population keeps growing

Model 2: Temperature effect



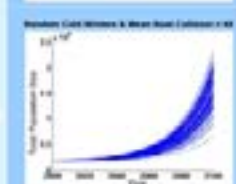
Even 100 years of consecutive cold winters do not cause the manatee population to decline

Model 3: Boat effect



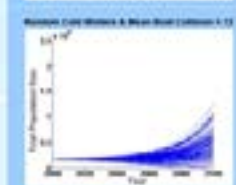
A mean of 68 boat collision deaths / year causes slower population growth, but the population size still increases

Model 4: Combined effect

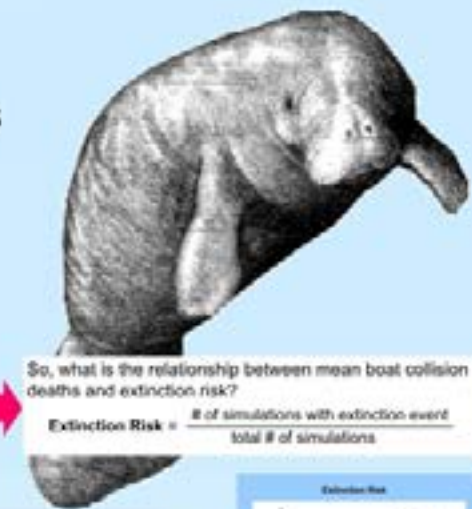


Assuming randomly occurring cold winters and a mean of 68 boat collision deaths / year, population growth became even slower, but the population size still increases

BUT.....



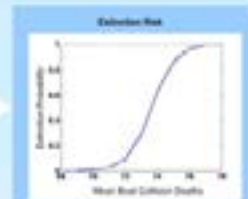
If the mean number of boat collision deaths / year becomes 72, there is a chance that the population will become extinct



So, what is the relationship between mean boat collision deaths and extinction risk?

$$\text{Extinction Risk} = \frac{\# \text{ of simulations with extinction event}}{\text{total } \# \text{ of simulations}}$$

The extinction risk increases rapidly when the mean accident deaths / year exceeds 72



5. Discussion

- Cold winters did not cause the manatee population to decline.** This result can be expected because there are thermal refuges during winter (e.g. power plant warm-water discharges) therefore, the mortality due to cold winters was very low. Developing a model that includes the effect of winter refuge loss could be interesting in future studies.
- Current average boat collision deaths (i.e. 68 deaths / year) slowed population growth** however, did not cause the manatee population to decline.
- Population growth became even slower when the effects were combined** (i.e. randomly occurring cold winters and mean boat collision deaths / year = 68) however, the population was still growing.
- Increase in the mean boat collision deaths (even by a small number) could be a serious problem.** For a mean ≥ 78 , the extinction probability became 1. The records show that the deaths due to accidents increased rapidly during last 5 years, therefore understanding the current situation of boat collision deaths is important to maintain manatee populations.

Gene Flow in Lions

Introduction

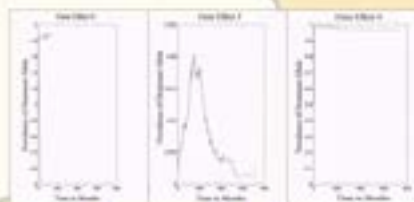
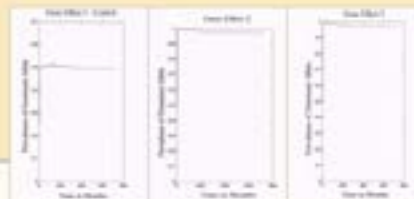
- One of the greatest dangers to small populations is related to gene flow
- Deleterious alleles can creep up and spread throughout a small population, pushing the population towards extinction
- It may be possible, as conservationists, to use gene flow in small populations to our advantage, by introducing beneficial genes into a small population, perhaps by translocating animals with desired traits
- In either case, it is essential to know how fast the new gene, whether beneficial or detrimental, will affect the population
- Because of their unusual social structure and endangered species status, lions present an interesting and informative model of gene flow in small populations

Objectives

- Determine what kinds of detrimental genes are likely to threaten a small population.
- Predict the speed with which a beneficial gene will spread throughout the population

Methods

- I developed a stochastic model that followed the fate of ten lion prides, month by month, over a period of 60 years
- I modeled nine different effects of genetics on survival:
 - **Gene Effect 1 - Control**
 - Initial population - random, about 68% heterozygous
 - Effect on survival - none
 - **Gene Effect 2 - Harmful recessive gene**
 - Initial population - RR with one Rr adult female
 - Effect on survival - \approx 10%
 - **Gene Effect 3 - Beneficial recessive gene**
 - Initial population - RR with one rr adult female
 - Effect on survival - \neq 10%
 - **Gene Effect 4 - Harmful dominant gene**
 - Initial population - rr with one Rr adult female
 - Effect on survival - \approx 10%
 - **Gene Effect 5 - Beneficial dominant gene**
 - Initial population - rr with one RR adult female
 - Effect - \neq 10%
 - **Gene Effect 6 - Very harmful recessive gene**
 - Initial population - RR with one Rr adult female
 - Effect on survival - \approx 50%
 - **Gene Effect 7 - Very beneficial recessive gene**
 - Initial population - RR with one rr adult female
 - Effect on survival - \neq 50%
 - **Gene Effect 8 - Very harmful dominant gene**
 - Initial population - rr with one Rr adult female
 - Effect on survival - \approx 50%
 - **Gene Effect 9 - Very beneficial dominant gene**
 - Initial population - rr with one RR adult female
 - Effect on survival - \neq 50%



Results

- Recessive genes had little effect, no matter how beneficial or detrimental
- Harmful dominant genes quickly eradicated themselves, and had little effect on the resulting population size
- Introductions of beneficial dominant genes resulted in small, quick increases in the prevalence of the beneficial allele, followed by a slower decrease
- Gene effect 9, the very beneficial dominant gene, was the only effect I modeled that had any real positive effect on the final population size.

Discussion

- If we are to attempt to use relocation as a way to "boost up" the genetics of small populations of lions, we must try to make sure the gene we wish to introduce is a dominant one. Also, relocating just one animal is unlikely to be enough to spread the gene in a reasonable amount of time. My model could easily be modified to simulate the introduction of multiple animals.
- Spontaneous mutations are unlikely to be a problem in lion populations; recessive genes do not have a large enough effect to be dangerous, at least in the relatively short term of 60 years, and dominant genes eradicate themselves quickly.