

# In a Time of Change:

## Integrating Science with Arts and Humanities in Alaska

Mary Beth Leigh

Associate Professor of Microbiology  
Director, In a Time of Change





# Aims

- Connect public to ecosystem science
- Foster ecosystem-based arts and humanities
- Strengthen ecosystem science
- Engage under-represented groups





# Approach

Competitively select artists

Organize field workshops  
Promote dialogue on  
human-ecosystem  
interactions with scientists

Produce original  
art work

Present  
performances and  
exhibits to the  
public

Measure attendance and  
impacts





A Performance by Writers, Artists, and Scientists

# In a Time of Change

2008

Friday,  
March 21

7:30 p.m.

Pioneer Park  
Auditorium

Admission Free

Reception following  
in the Bear Gallery

Readings by  
John Mearns  
Marjorie Cole  
Carolyn Kreemers  
John Morgan  
Mary Shields  
Tara Varuch

Modern dance by  
Deliquescence Designs  
New York City  
Chickadee City  
Fairbanks

Music by  
Susan Green

Art by  
Douglas Yates  
Mary Matthews  
Teresa Hollingsworth

Sponsors



The Earth is Changing

## Watcha Gonna Do?

A presentation by students in

Climate Change and Creative Expression Class at Effie K  
Charter School



Saturday, May 16 7:00pm

Empress Theater, 3rd Avenue Co-op Building

Free Admission

A collaborative project of:

Effie Kokrine Charter School

Interior-Aleutians Campus Early College Program

UAF E.P.S.Co.R Grant Program



IN A TIME OF CHANGE: ARTISTS AND SCIENTISTS  
ENVISIONING THE FUTURE

## PERFORMANCE

NEW WORKS BY

PAVVA INUPIAQ DANCERS • SUSAN GRACE  
THEATRE UAF PERFORMANCE LAB • MAKING WAVES  
CAROLYN KREEMERS • DELIQUESCENCE DESIGNS DANCE  
SCIENTISTS TERRY CHAPIN, TERESA HOLLINGSWORTH  
AND MARY BETH LEIGH

STEPHAN GOLUX ARTISTIC DIRECTOR

FRI. SEPT. 10 AND SAT. SEPT. 11, 2010

7:30 PM • PIONEER PARK THEATER

FREE ADMISSION • RECEPTION FOLLOWING IN THE BEAR GALLERY

## ART EXHIBIT

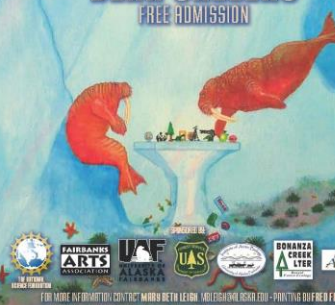
NEW WORKS BY 24 ALASKAN ARTISTS • KARIN FRANZEN CURATOR

SEPT. 3 - 25, 2010 TUES. - SAT., NOON-6 PM

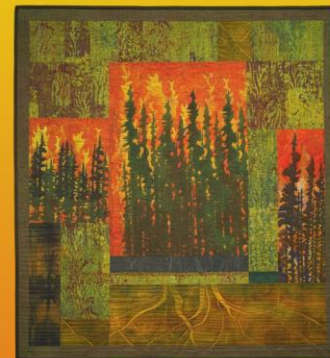
FIRST FRIDAY RECEPTION SEPT. 3, 5-7 PM

BEAR GALLERY

FREE ADMISSION



## IN A TIME OF CHANGE: The ART of FIRE



A MULTIDISCIPLINARY PROJECT INTEGRATING ART, FIRE SCIENCE AND MANAGEMENT IN ALASKA

**AUG. 3 - SEPT. 3, 2012**

PROFESSIONAL ART EXHIBIT  
BEAR GALLERY, ALASKA CENTENNIAL  
CENTER FOR THE ARTS, PIONEER PARK

Featuring original works by Alaskan artists:  
SARAH DeGENNARO • AMANDA ELLIS  
JESSIE HEDDEN • YASUNARI IZAKI  
ERINN KATHRYN • PHIL MARSHALL  
JENNIFER MOSS • REE NANCARROW  
HANNA STEVENSON  
Curated by KARIN FRANZEN

STUDIO TOUR  
POLHAVN WOODFABRIK SHOP  
AUG. 4, 12-4 P.M., 1300 SKYLINE DRIVE

COMMUNITY ART SHOW  
ALASKA PUBLIC LANDS  
INFORMATION CENTER OFFICE,  
MORRIS THOMPSON  
CULTURAL CENTER

Lectures/discussions with artists,  
fire scientists and fire managers  
MORRIS THOMPSON  
CULTURAL CENTER

WEDNESDAYS, AUG. 8, 15 AND 22, 7 P.M.

Images: "Spouse Fire," "Bear art" by Karin Franzen



**FIRST FRIDAY RECEPTIONS:**  
AUG. 3, 5-7 P.M. (BOTH VENUES)

[www.frames.gov/arts/online](http://www.frames.gov/arts/online)





# *In a Time of Change:* ***Trophic Cascades***

*Predator-prey-ecosystem  
interactions*

*August 2-31, 2013*

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*Artists:*

*Charlotte Bird, Jack Dalton, Pedar Dalthorp,  
Daryl Farmer, Karin Franzen, Margo Klass  
Ree Nancarrow, Peter Porco, Todd Sherman,  
Colleen Toledano*

*Pictured: Detail from 'Hare and Gone Again'  
Ree Nancarrow & Charlotte Bird*

*In a Time of Change:* **Trophic Cascades**

**Bonanza Creek LTER**





*Detail from 'Hare and Gone Again'*  
Ree Nancarrow & Charlotte Bird

# *In a Time of Change:* **Trophic Cascades**

*August 2-31, 2013*

*The art and science of  
predator-prey-ecosystem  
interactions*

**More information at:**  
[https://sites.google.com/a/  
alaska.edu/  
itoc-trophic-cascades/](https://sites.google.com/a/alaska.edu/itoc-trophic-cascades/)



**First Friday Reception**  
**August 2, 5-7 PM**

**FAA Bear Gallery Hours:**  
**Noon-8 PM Daily**

*Featuring new works by:*

*Charlotte Bird, Jack Dalton, Pedar Dalthorp, Daryl Farmer, Karin Franzen,  
Margo Klass, Ree Nancarrow, Peter Porco, Todd Sherman, Colleen Toledano*

*Curated by: Karen Franzen and Ariel Thomasson*

*Produced by: Mary Beth Leigh*





## IN A TIME OF CHANGE: TROPHIC CASCADES SPECIAL LITERARY READING



**Jack Dalton** has grown up between two worlds, his Yup'ik Inuit and European heritages. He is a storyteller, actor, writer, teacher, director and visual artist/sculptor. Jack is a Rasmuson Foundation Fellow. He has created and produced five plays, written a book, and taught creative writing to tens-of-thousands of students around the world. He is currently working on his first opera, *Ada*, based on the life of Ada Blackjack.

**Daryl Farmer** is the author of *Bicycling Beyond the Divide*, a Barnes and Noble Discover Great New Writer's Award and was a Colorado Book Award finalist. Farmer's work has appeared in such journals as *Paddlefish*, *Hayden's Ferry Review*, *South Dakota Review*, *Quarter After Eight* and *Isotope*. He received his M.A. and Ph.D. in creative writing from the University of Nebraska-Lincoln. Currently, he is an assistant professor at the University of Alaska-Fairbanks.



**SATURDAY  
AUG 17TH @ 4 PM**

**Bear Gallery  
Alaska Centennial Center for the Arts  
Pioneer Park, 2300 Airport Way**

Questions: contact Jill Shipman at [jill@fairbanksarts.org](mailto:jill@fairbanksarts.org) or 456-6485 ext. 222



This reading is sponsored by the Fairbanks Arts Association, an organization funded by Private, Corporate and Foundation memberships and donations, City of Fairbanks, Fairbanks North Star Borough, Alaska State Council on the Arts, and the National Endowment for the Arts.

# Process

- RFP, competitive selection of 10 artists
  - Teams and individuals
  - Must be Alaskan resident (or teamed with one)
  - Writers, visual artists, Alaska Native storyteller/writer
- 3-day field workshop in Denali National Park
  - With park scientists and educators
  - Required for all artists
- 1-day field trip to Bonanza Creek LTER
  - With BNZ scientists
  - Optional (few out-of-towners)
- Integrated exhibit in Fairbanks, free public gallery + literary reading
- Curated by Karin Franzen and Ariel Thomasson (REU! And recent UAF BFA Art graduate)



# Funding

- BNZ support
  - \$2300 for Denali National Park field workshop
  - \$6400 for exhibit production
    - Equals one REU
    - Curator salary
    - Supplies, PR materials, art shipping, catering, etc.
  - Additional funds offered for next phase
    - Post production work (website, documentation, data analysis)
    - Publication
    - Tour to Anchorage next Sept (Alaska Pacific University)
- In-kind support
  - Fairbanks Arts Association, Denali National Park & Preserve, Murie Science and Learning Center, UAF, Institute of Arctic Biology, BNZ logistics and volunteer time

# Exhibit Attendance

1820 visitors total!

~280 for opening reception (5-7 pm)

Gallery open 12-8 pm daily for 1 month

*Exceeds the total number of visitors of all of our previous 3 performances and exhibits combined*





# Survey

- Incentive: Raffle for an original art piece (\$100 value)
- 94 respondents



*Wolf Walks*  
Todd Sherman

In a Time of Change:  
Trophic Cascades

Bonanza Creek LTER







*Lynx Stalks*  
Todd Sherman

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER



*Red Fox with Prey*  
Todd Sherman

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER

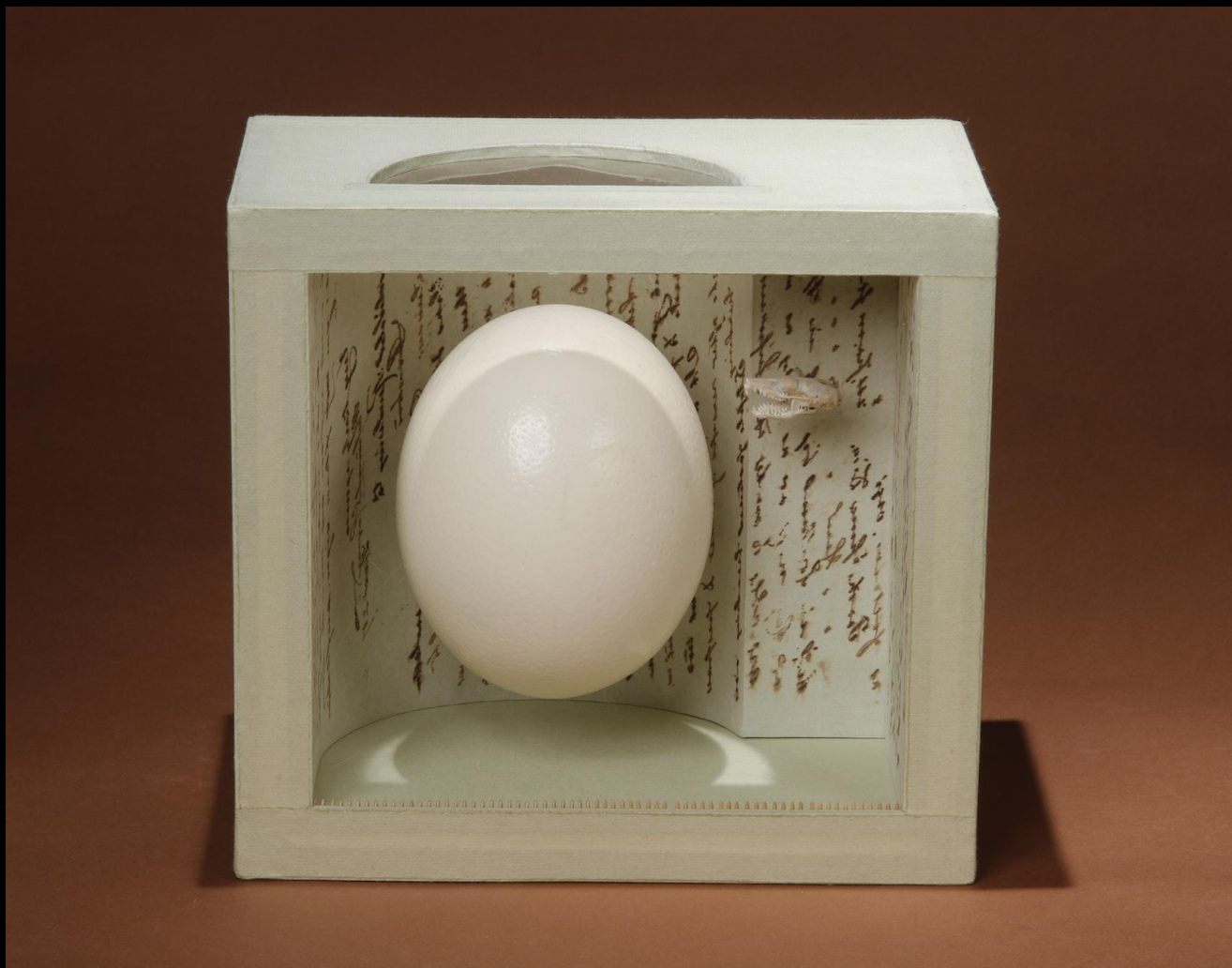


*Symphonic*, these cascades.  
Grasses leaning toward sun,  
bees aiming always toward  
nectar or hive. Bug-eating  
terns, or kittiwakes screeching,  
wolverines stealing eggs from  
a nest. Cacophonous, really,  
dissonant at least. Fire, thunder,  
quakes, hurricanes. Sometimes,  
sure, high pitched harmonies  
ring, but more often, seals  
are shredded to blood that  
stains predator chops, ice  
calving splashes into joyous  
ocean filled lament, a crescendo  
of hunger is fed, then rises again.

*Against Harmony in Nature*  
Daryl Farmer

In a Time of Change:  
Trophic Cascades

Bonanza Creek LTER



*Mole 103*  
Margo Klass

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER





*FEAST: Predators and Prey at the Table of Interior Alaska*  
Margo Klass

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER

We seven sit and stare  
into flames, each in our  
own state of campfire  
reverie. I think how fire  
devours wood, remnants  
once fed by CO<sub>2</sub>, light  
water and soil. Leaves,  
herbivore energy which  
transforms the carnivore.

## *To Consume*

We are eating fresh caught  
plankton eating salmon,  
a fish inside the world it  
carries, once outside us,  
now inside, we carry the  
sea, and all the while  
wood becomes air.

Out across the light of  
a gibbous moon standing  
sacred above Blueberry  
Mountain, I want to feed  
on the profundity of all  
fecundity. I stand, walk  
beneath the birch

Daryl Farmer

In a Time of Change: Trophic Cascades

Forest  
Bohanza Creek LTER

offer my gift of



*Because Einstein Once Said, If Honeybees Are Ever to Perish,  
We Humans Would Soon Follow*

Book: Margo Klass

Poem: Daryl Farmer

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER





# *Hesitated Just Long Enough*

Karin Franzen

In a Time of Change:  
Trophic Cascades

Bonanza Creek LTER



*Vulnerable to Sensitive Eyes*  
Karin Franzen

In a Time of Change:  
Trophic Cascades

Bonanza Creek LTER



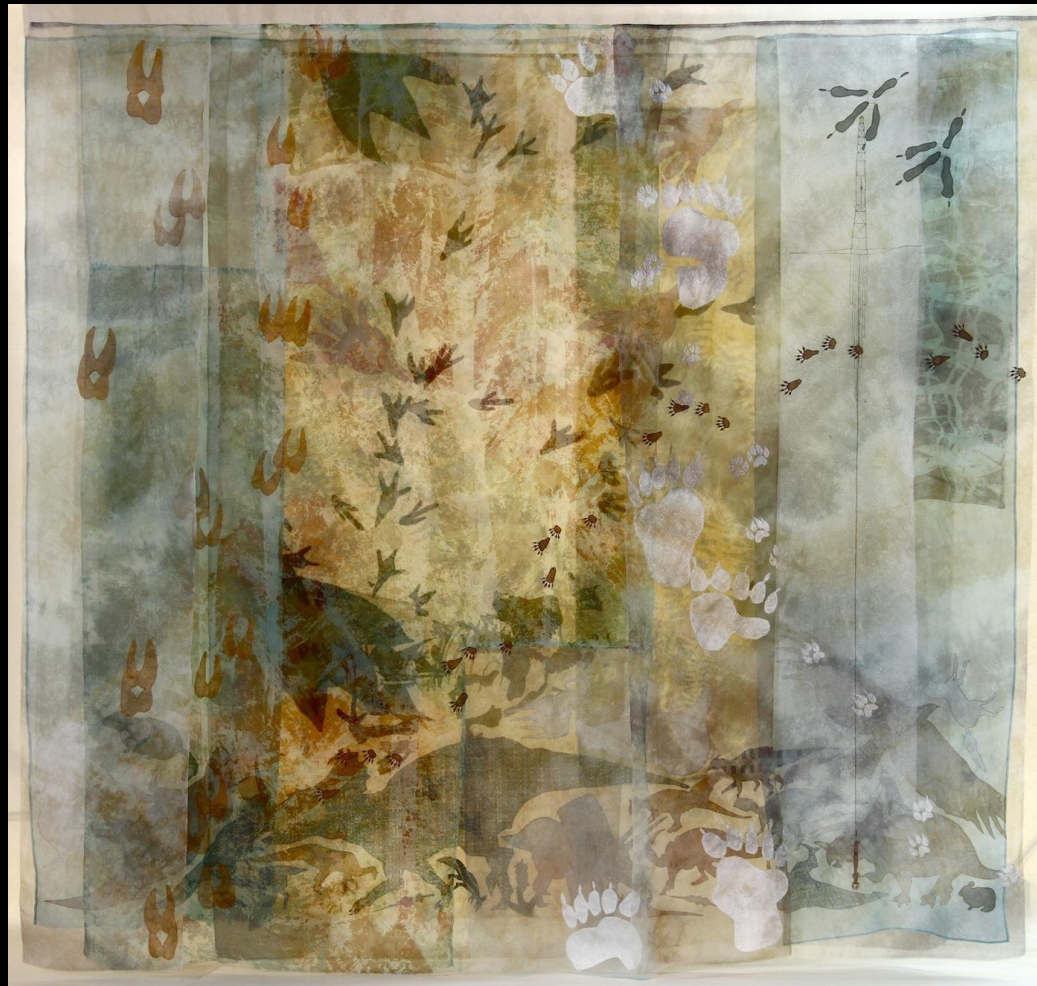


Karin Franzen's *The Dance Floor* contains many hidden surprises layered on and between three pieces of sheer, hand-painted, fabric.

In a Time of Change:  
Trophic Cascades

Bonanza Creek LTER





*The Dance Floor*  
Karin Franzen

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER

...

Why do the first human beings always take more than they need?  
Why do they constantly, throughout history, through all the time these stories have been told,  
why do the first humans always make the same mistakes, over and over and over again?  
In all of these stories, the first human beings learn. They come up with so many different ways  
to pass on the knowledge of The Way.  
Yet, we still do it. We still take more than we need.  
And, time and again, humanity pays for it with existence.

...

No one can overcome Nature, the ultimate Creator/Trickster.  
The question is not if we will conquer the oldest stories ever told.  
The question is simple.  
How long will it take Nature to return to equilibrium, once we have succumbed?  
Nature will return.

Excerpt from '*A Story*'  
Jack Dalton

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Bonanza Creek LTER





*Hare and Gone Again*  
Ree Nancarrow and Charlotte Bird

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER





*Now and When*  
Charlotte Bird  
and  
Ree Nancarrow

In a Time of Change:  
Trophic Cascades

Bonanza Creek LTER







Examining details of Pedar Dalthorp and Colleen Toledano's *Skulls*.

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Bonanza Creek LTER



*Canis lupus*  
Colleen Toledano

In a Time of Change:  
Trophic Cascades

Bonanza Creek LTER



*Canis lupus*  
Peter Doherty  
& Colleen Toledano  
2011



Soon after I learned the meaning of “trophic cascades,” I thought ... Duh! But of course! The web of life! All the animals and all the plants, the Earth, the oceans, the air, the solar grace of life-giving energy—all nature intimately cozied up together, only six degrees of separation, *the leg bone’s connected to the knee bone, the knee bone to the thigh bone*. ...Tug on the thread here and it pulls tight way over there.

Excerpt from ‘*A Web for the Ages: Making Art from Science*  
Peter Porco

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER

Published in Fairbanks Daily News-Miner and *Permafrost*



The First Friday opening at the Bear Gallery in Fairbanks, AK, allowed artists and scientists to continue dialogue.

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Bonanza Creek LTER





*Wolf: Reliquary*  
Margo Klass

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Bonanza Creek LTER



Artist Charlotte Bird explains her piece *Now and When* to fellow artist Peter Porco.

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Bonanza Creek LTER





In a Time of Change: Trophic Cascades  
Bonanza Creek LTER



“I never realized that predators were necessary.”

-Anonymous Survey Participant

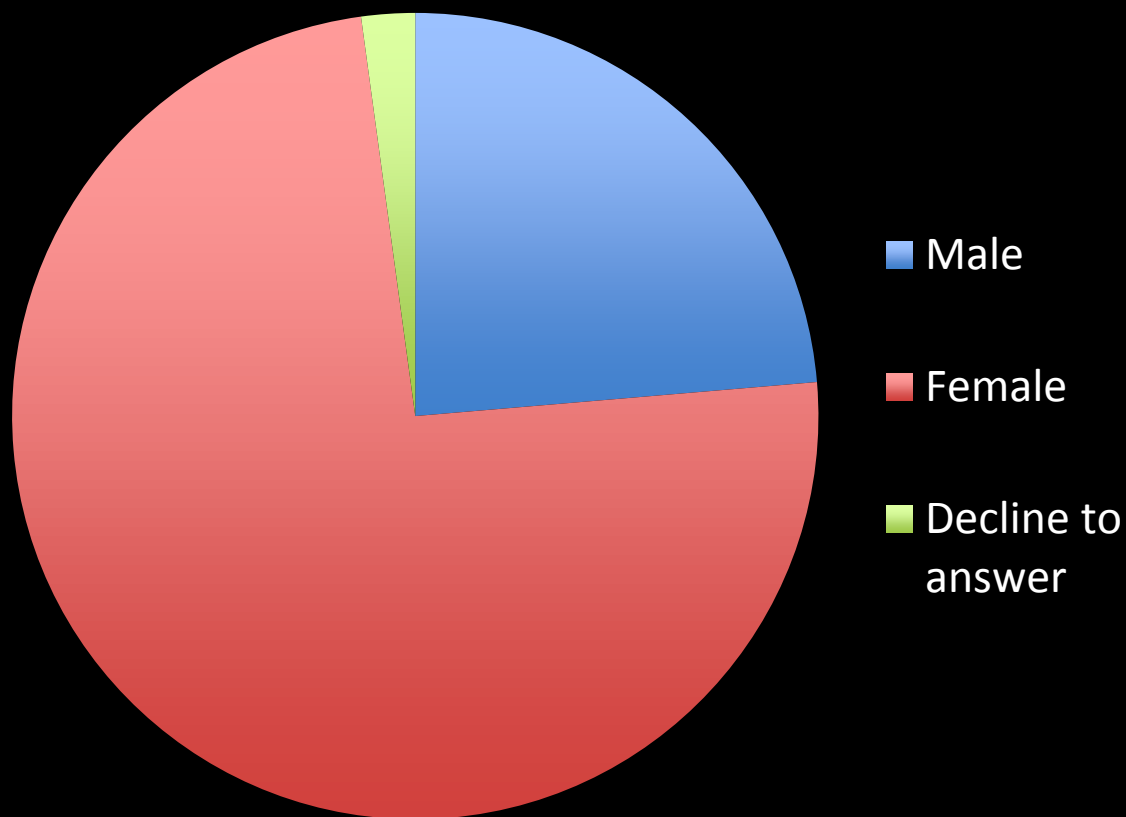
In a Time of Change: Trophic Cascades  
Bonanza Creek LTER

# Survey

- Incentive: Raffle for an original art piece (\$100 value)
- 94 respondents



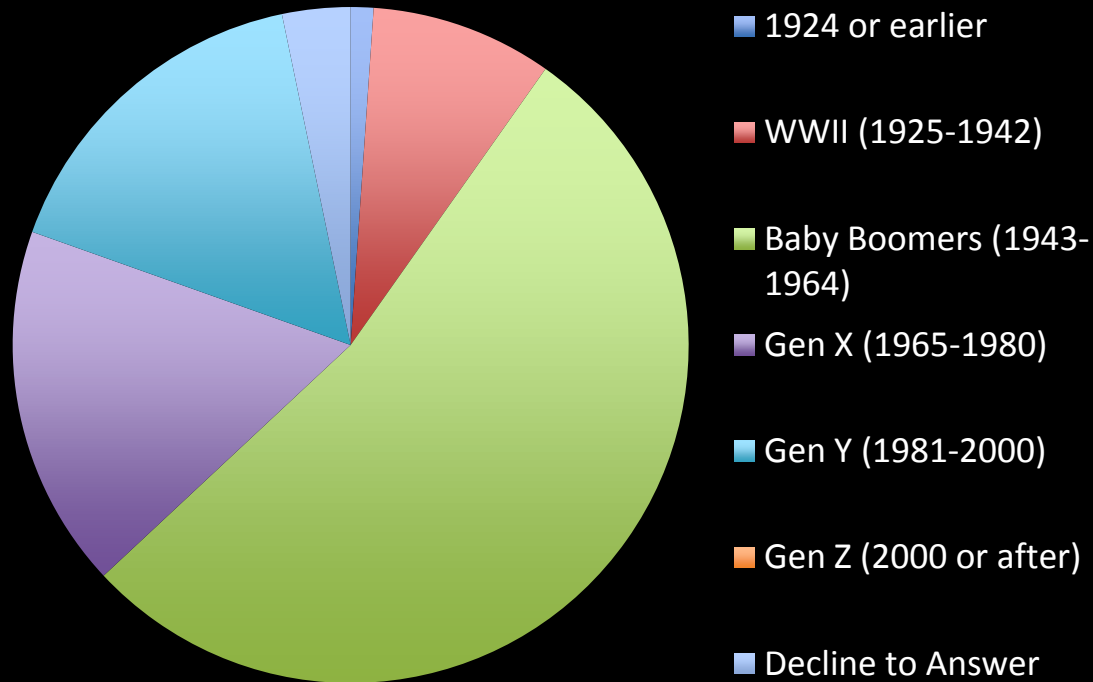
# Gender of survey respondents



n=94

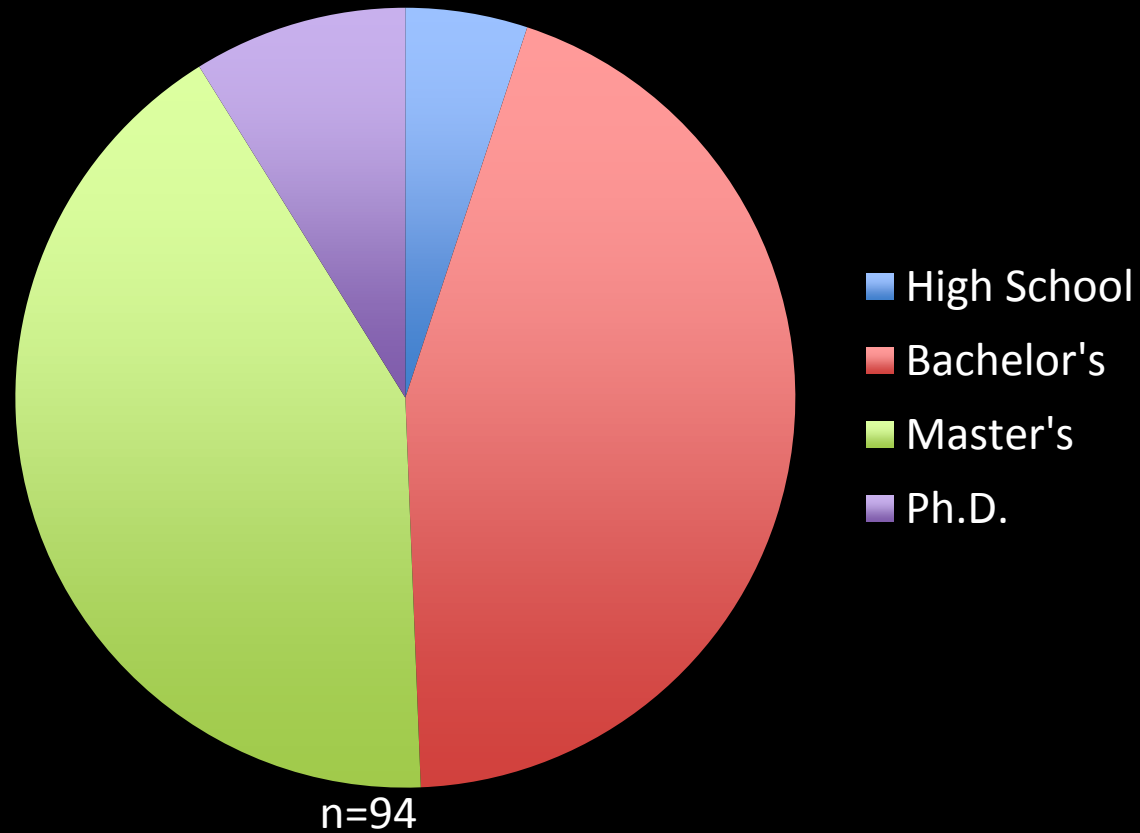


# Age demographics of respondents

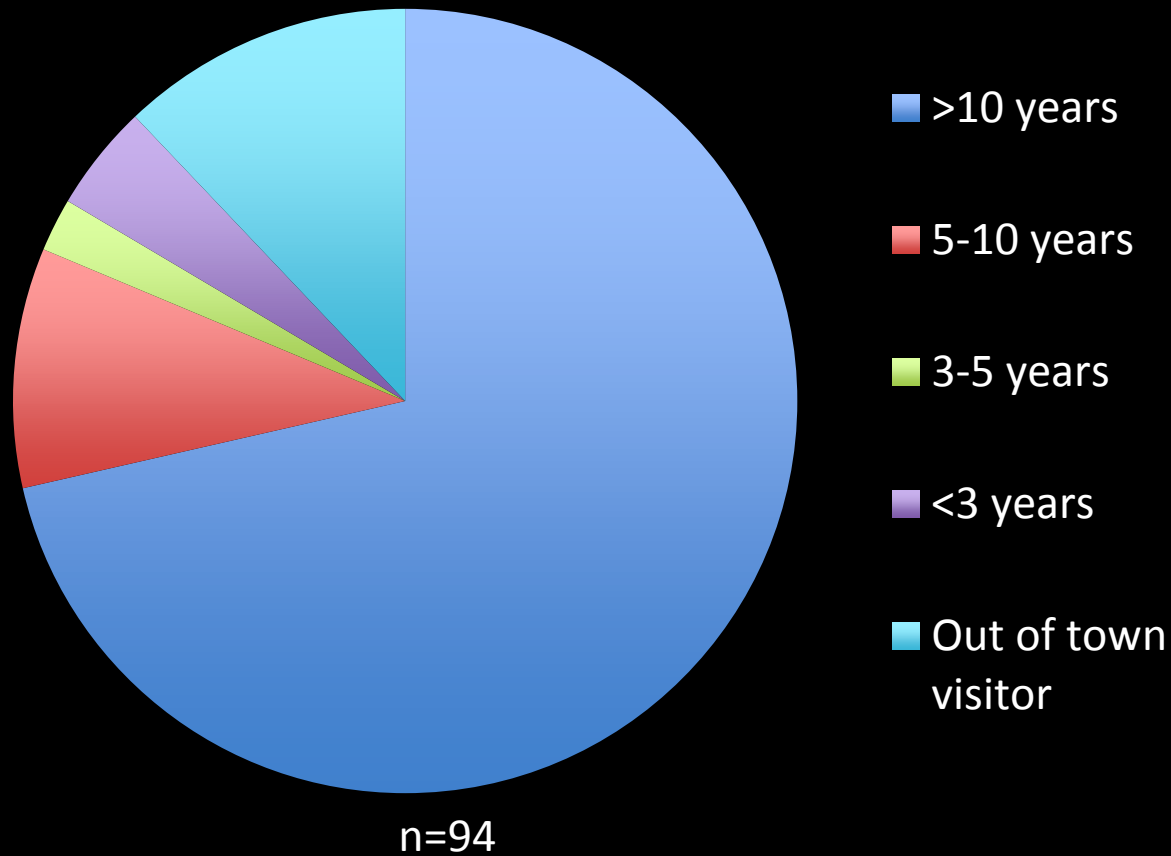


n=94

# Educational level of respondents

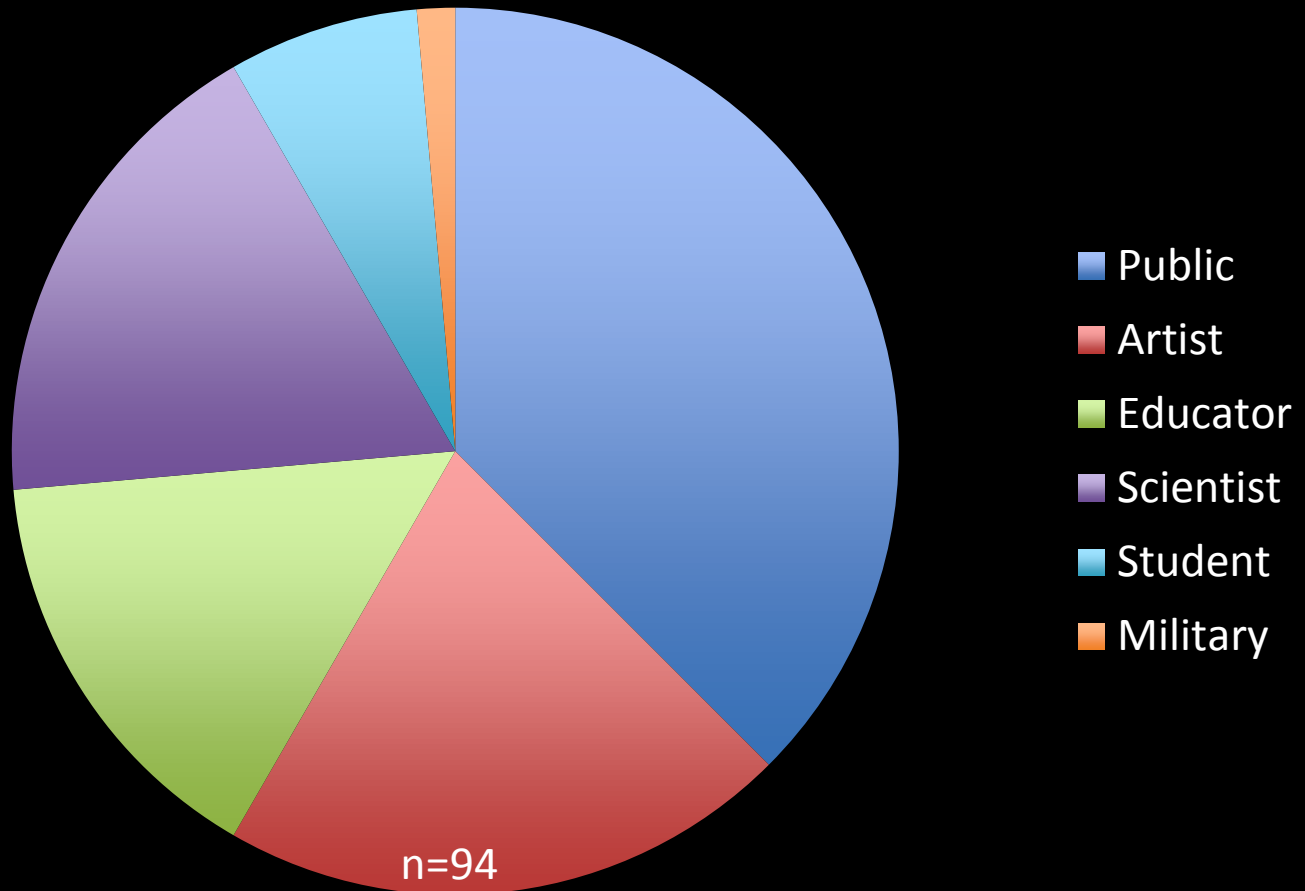


# Number of years living in Alaska

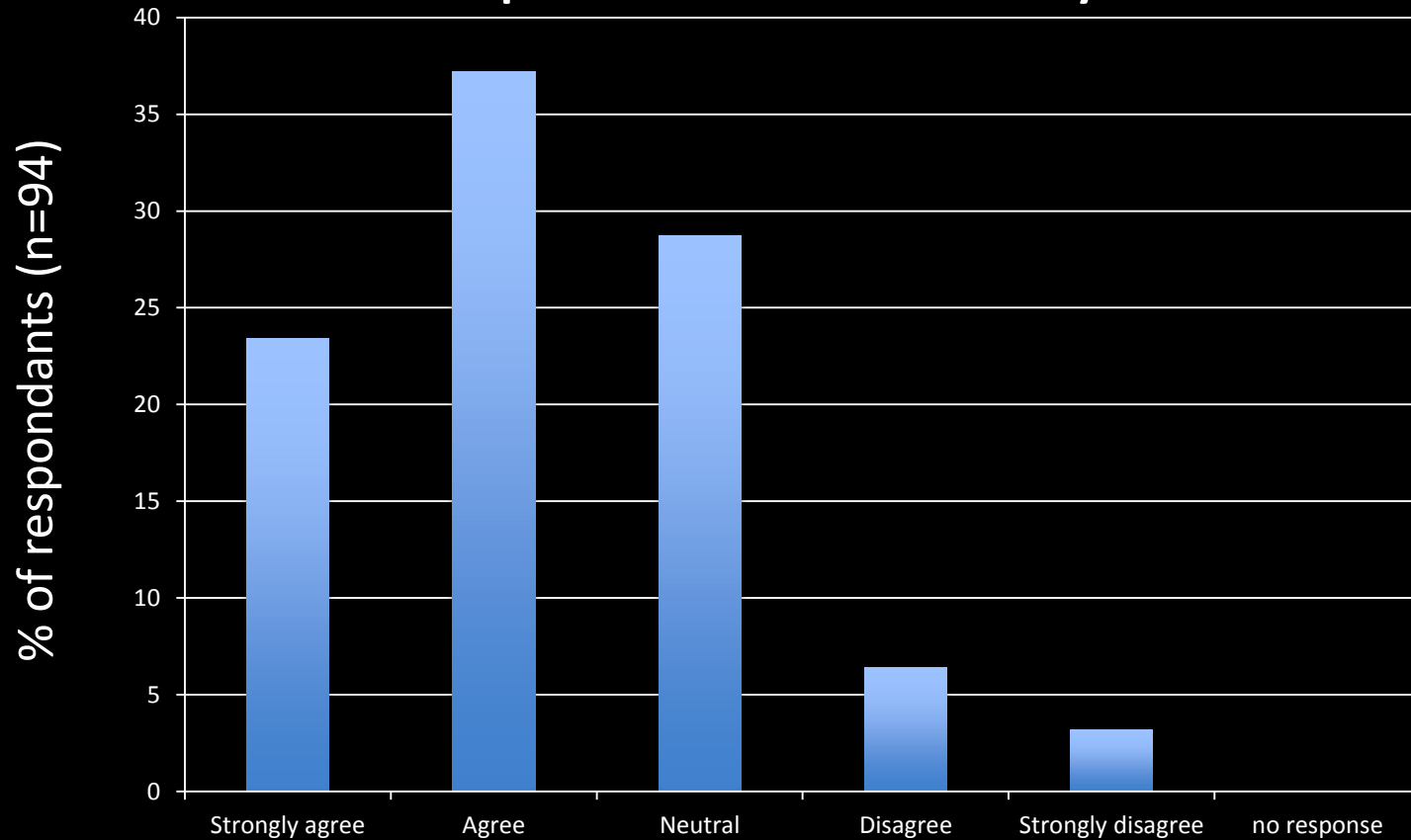




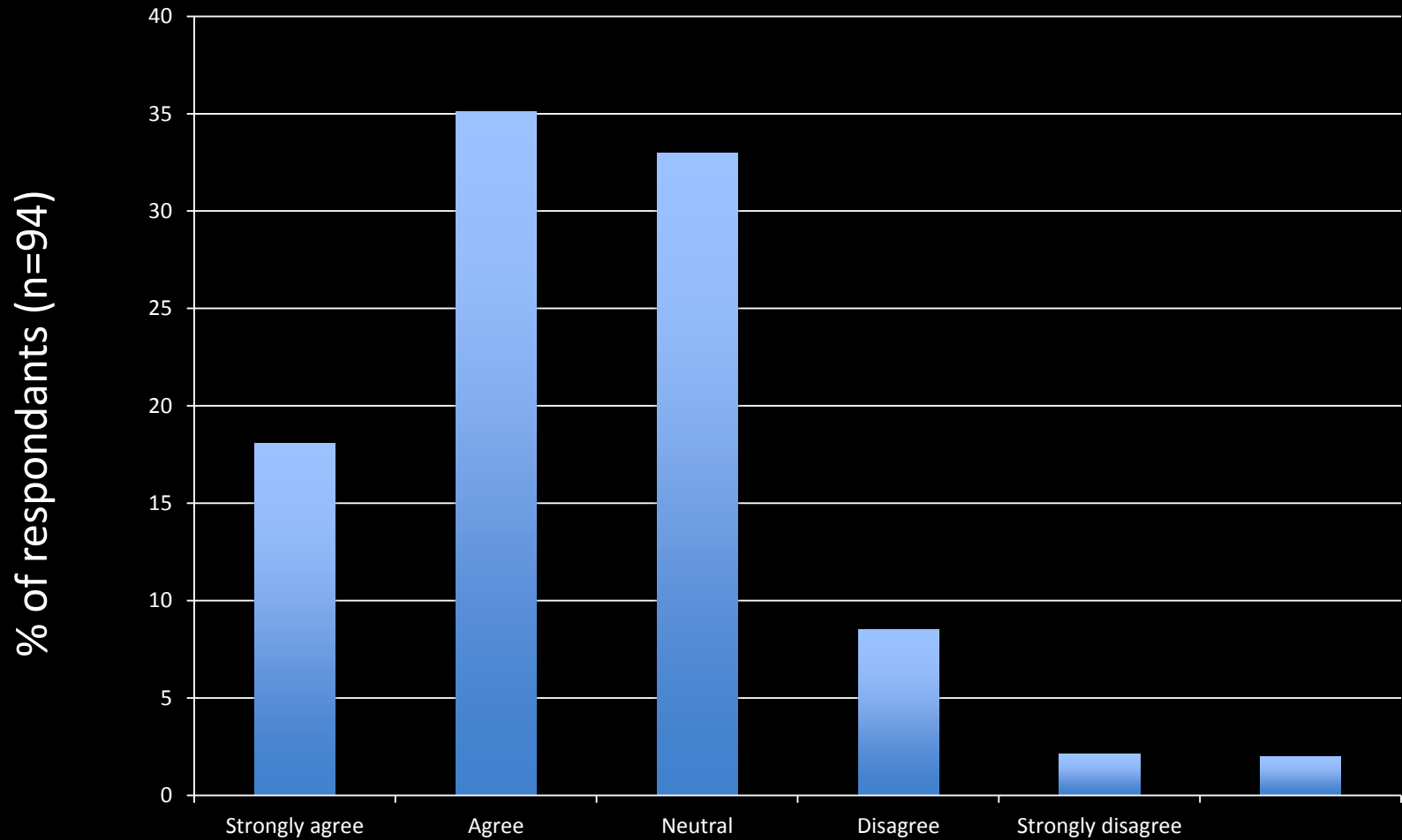
*Please circle the group with which you most closely identify*



**Experiencing the Trophic Cascades exhibit has  
increased my knowledge about the interconnectedness  
of plants and animals in ecosystems**



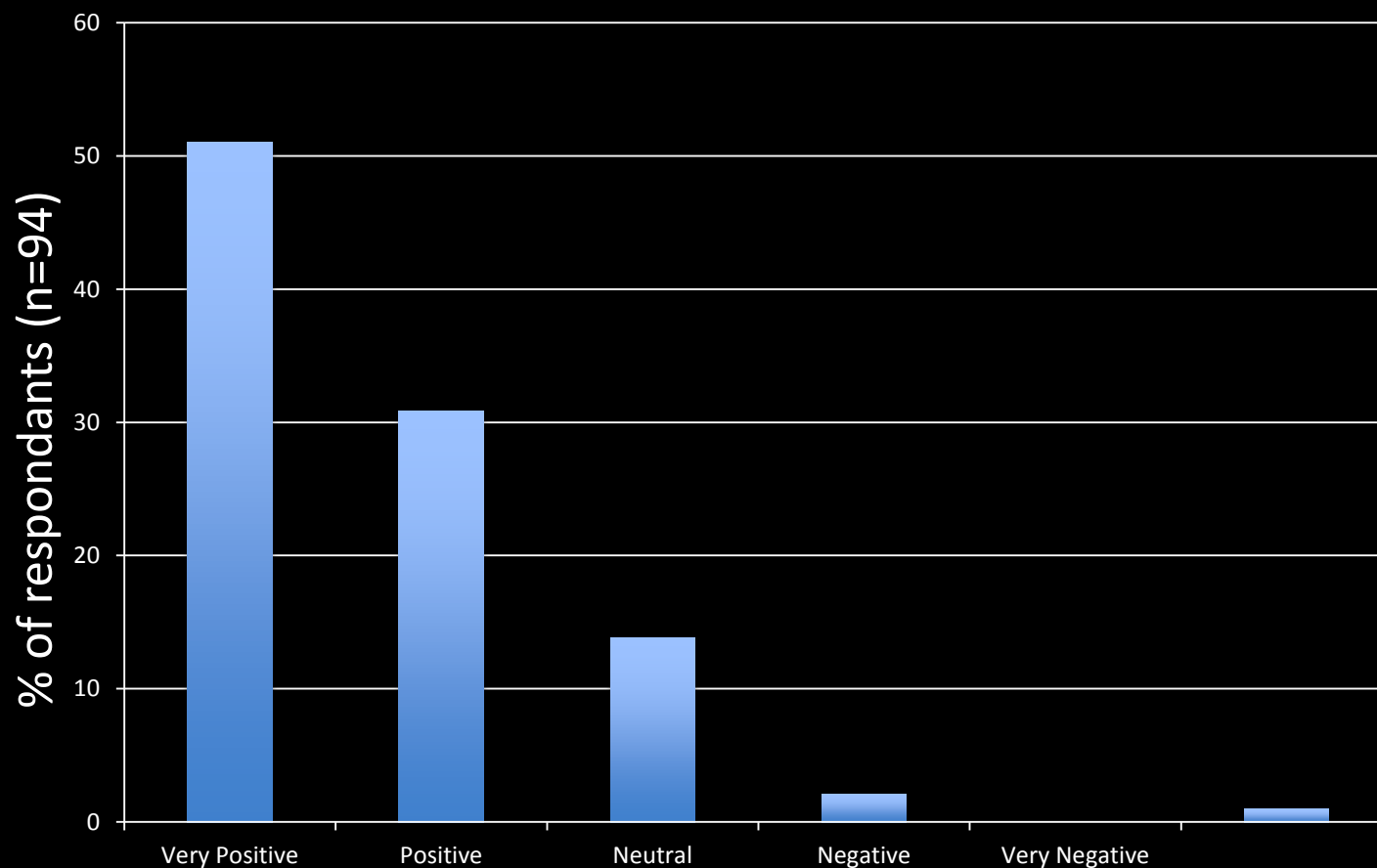
## Experiencing the Trophic Cascades exhibit has increased my knowledge about predators in Alaska



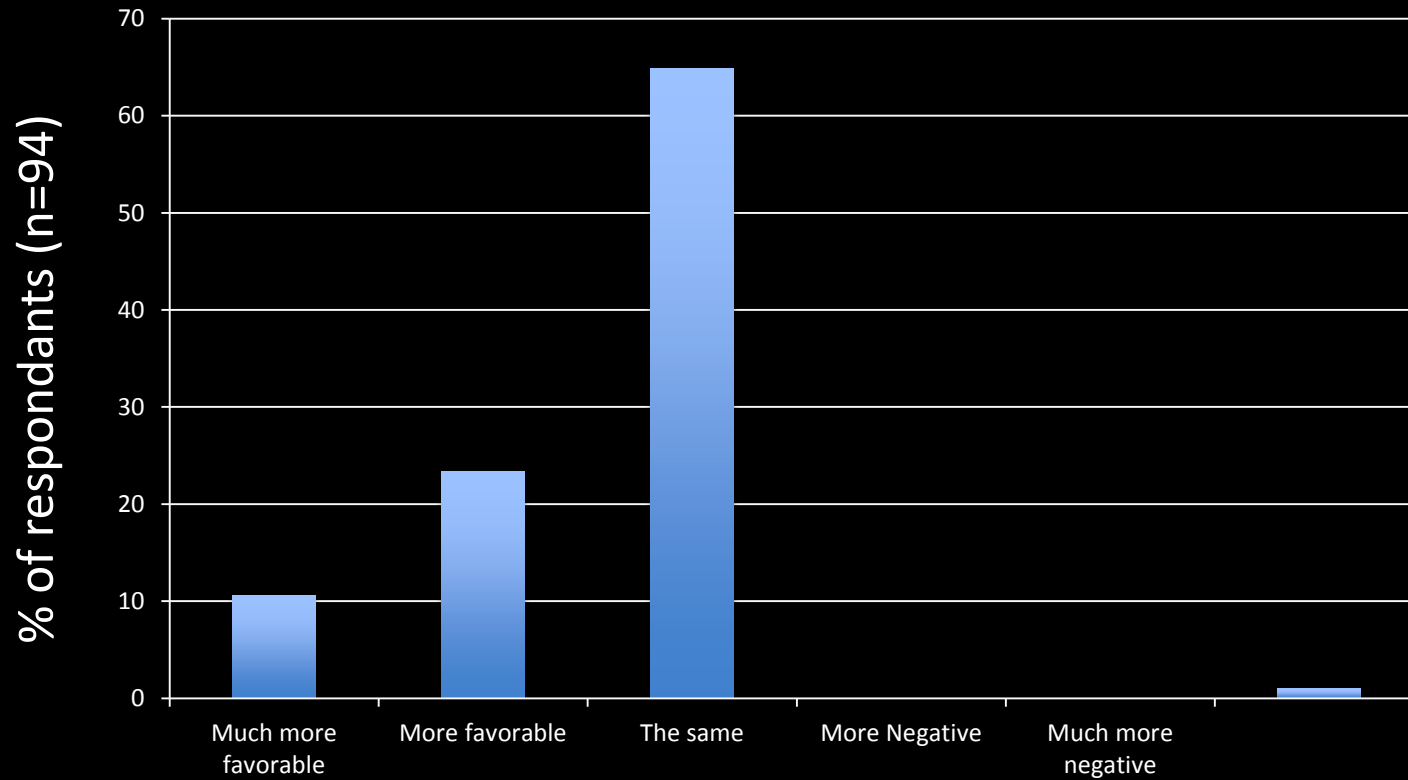
*Many commented that they already knew a lot about this*



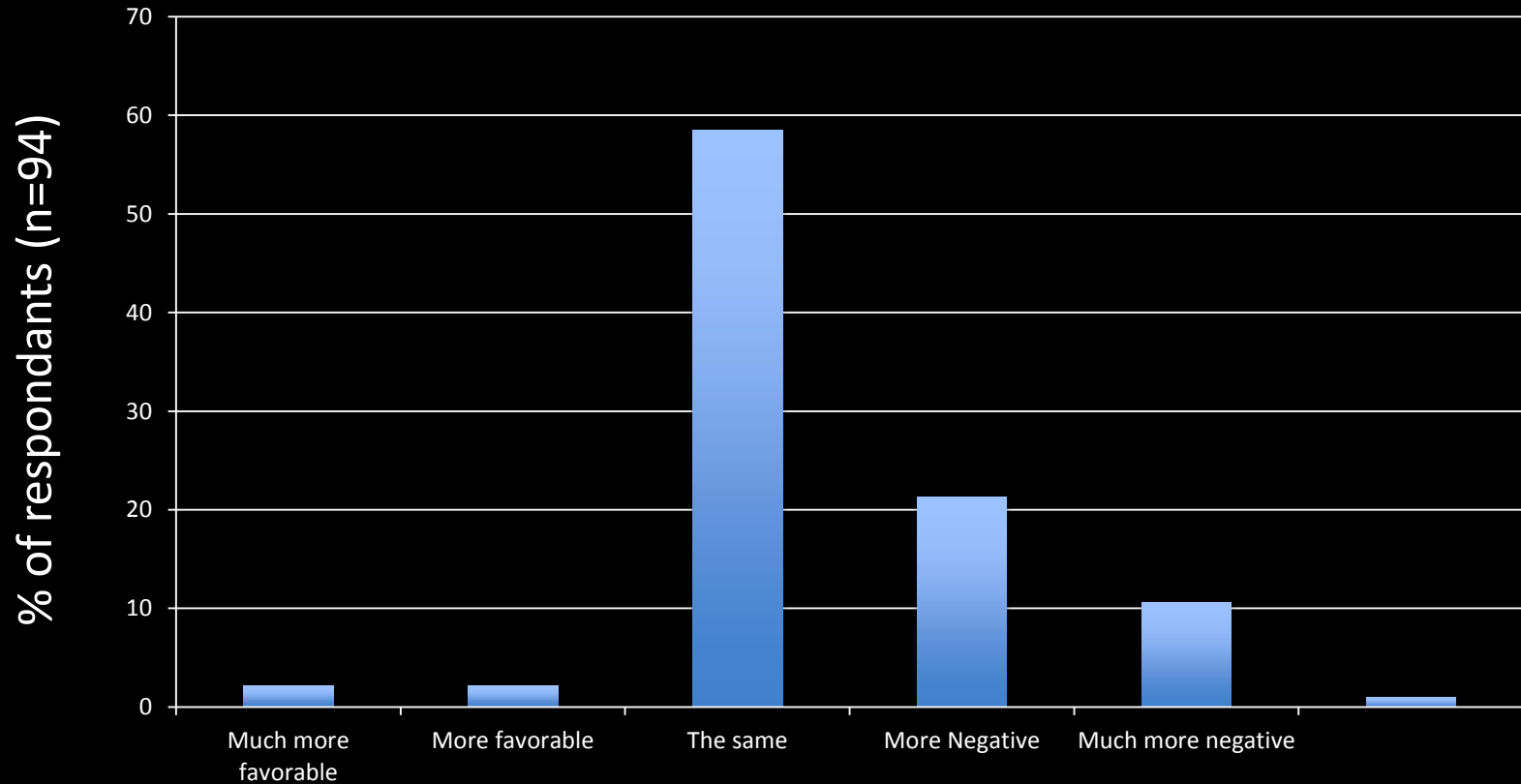
**Before viewing the exhibit, my attitude toward the importance of predators in ecosystems was**



**As a result of experiencing the exhibit, my attitude  
toward the importance of predators in the ecosystem  
is**

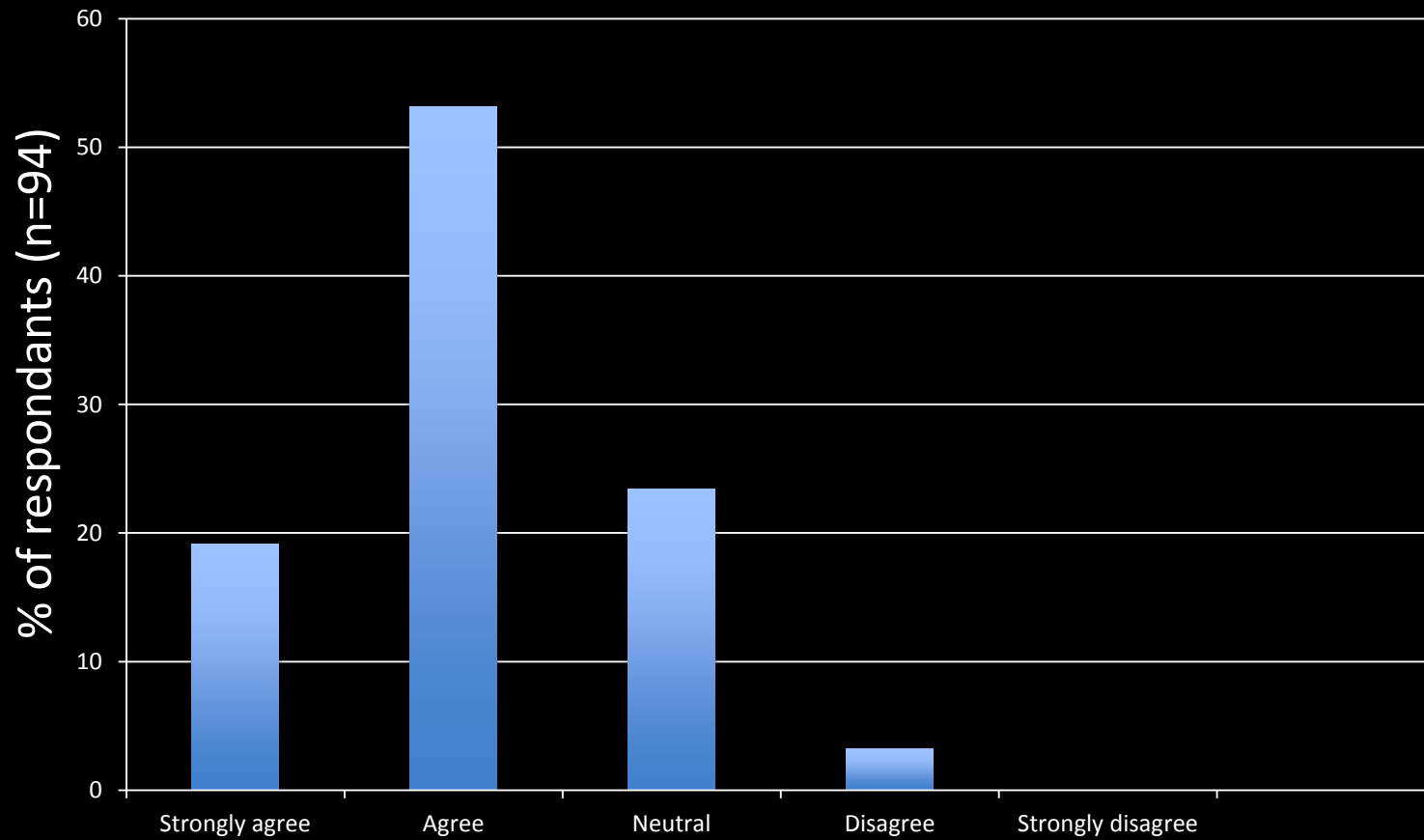


**As a result of experiencing the Trophic Cascades exhibit,  
my attitude toward removing predators from the  
ecosystem is**

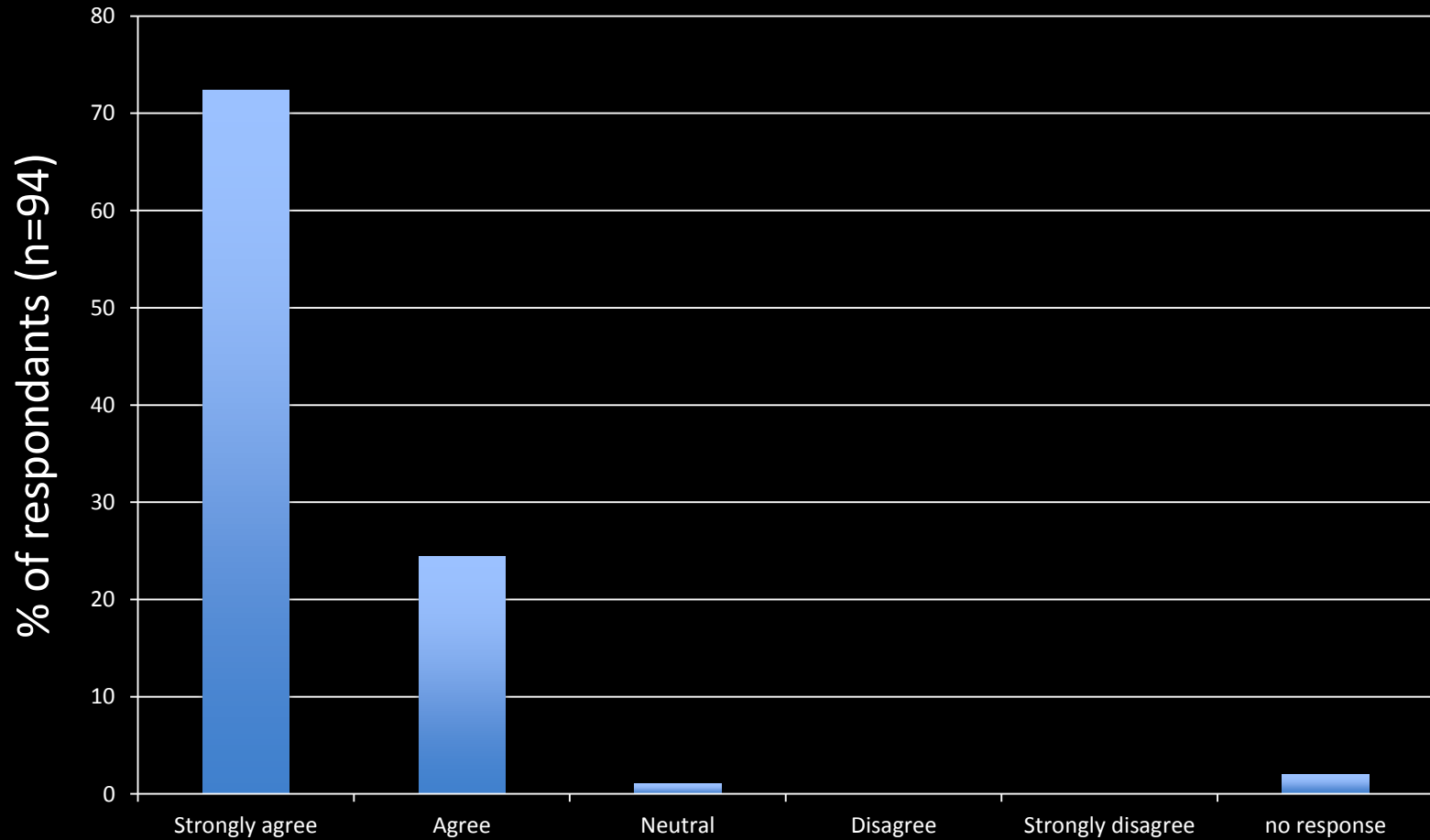




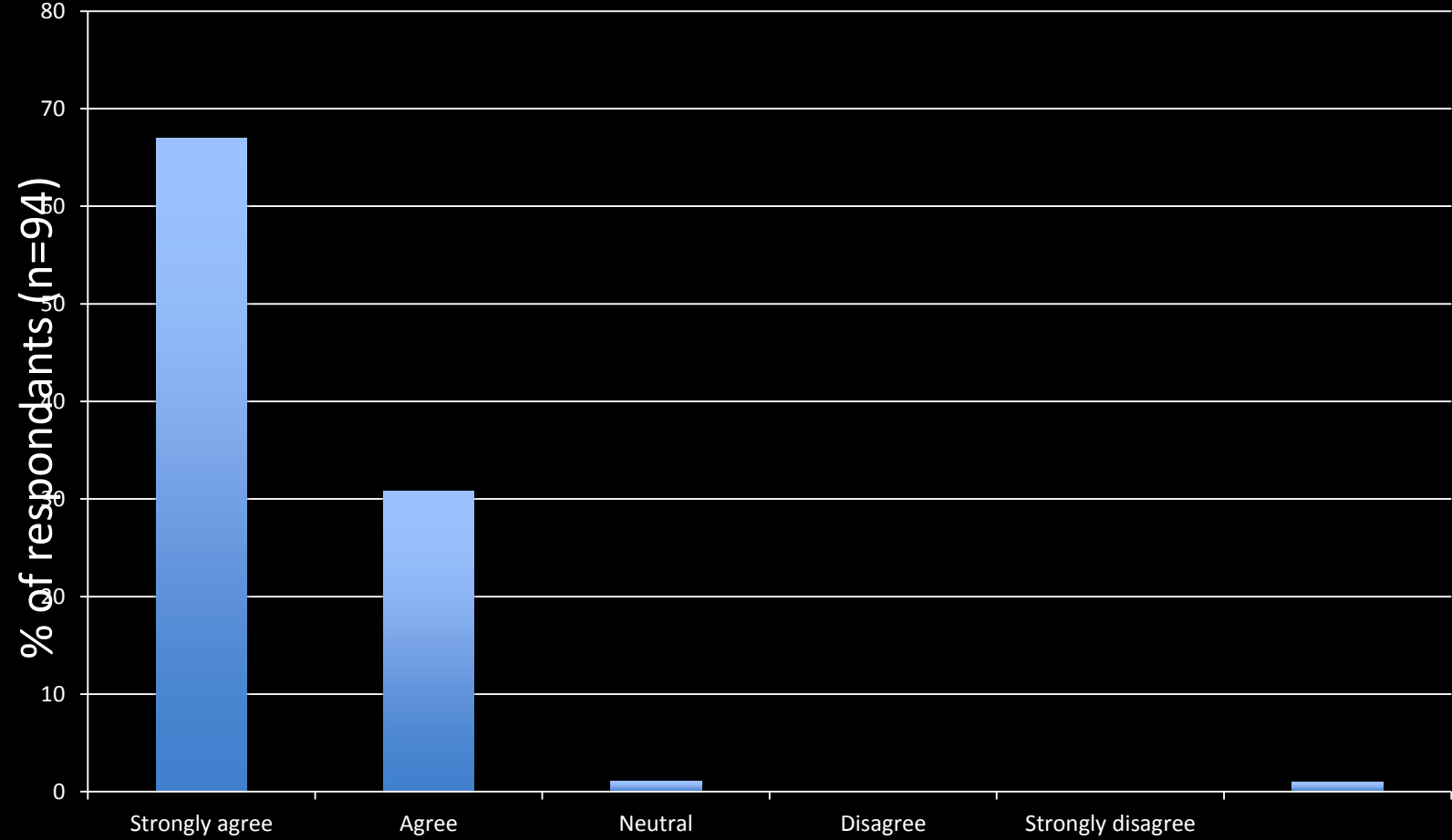
**After viewing the Trophic Cascades exhibit, I am  
motivated to learn more about predator-prey-ecosystem  
interactions in Alaska**



**I believe that art can be an effective mechanism for building public awareness and understanding of important issues**



**I believe that art can be an effective way to understand ecosystems and the role of humans in the natural world**





*“After reading and looking closely at each piece, I stood in awe, surrounded by the by the power of words and images to evoke deep feelings of amazement at the precarious balance of the natural world.”*

-Anonymous Survey Participant

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER

# Less positive comments

- *Too hot; no alcohol 😊*
- *Need more on effect of human overpopulation and pollution.*
- *I think most patrons don't get the message - the art is well appreciated.*
- *Very unclear message, great art!*

“I feel a deep sense of gratitude to the artists and scientists involved in this thought-provoking project. Thank you!”

-Anonymous Survey Participant

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER



“Your (BNZ) involvement with the LTER-Arts program is an inspiring and progressive approach for linking science to humanities and to society in general.”

-BNZ Site Review Report (Saran Twombly et al.)

In a Time of Change: Trophic Cascades  
Bonanza Creek LTER

# Network-wide efforts

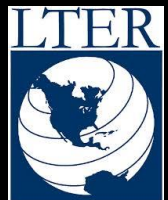
## *Ecological Reflections* activities

- NSF Headquarters art tours
- ESA exhibits
- Workshops at LTER ASM
- **LTER Synthesis Grant – Synthesizing LTER Arts and Humanities Activities**
  - PI Michael Nelson (AND), Co-Is Fred Swanson (AND) and MB Leigh (BNZ)
  - Postdoc Lissy Goralnik (AND, Oregon State Univ.)
  - Synthesis, publication, reflection, planning, coordinating
  - Seek larger scale funding (NEA/NEH/NSF cooperation, NSF RCN?)

# LTER Ecological Reflections Exhibit NSF Headquarters, Arlington, VA (Feb.-June, 2013)



Special thanks Alison York, Sarah Trainor, Jen Northway, Jamie Hollingsworth, Clarisse Hart, Fred Swanson, Teri Daulton





## Evolving Landscapes Through Artists' Eyes

Bright orange flames burn through the spruce trees, leaving behind a forest of curling gray smoke and blackened trunks. These are artist Ree Nancarrow's impressions of Alaska's Denali National Park, stitched into a quilt as part of an unusual collaboration between creative artists and scientists.

Denali Park is home to the Bonanza Creek Long-Term Ecological Research (LTER) site, one of 26 National Science Foundation (NSF) study areas chronicling change in the flora, fauna, and environment over decades. Bonanza Creek is also one of 11 LTERs that



has invited artists to reflect on these changing landscapes in oils, watercolors, fiber art, photographs, essays, poems, and other media.

"We are, in a way, collecting humanities data," says Fred Swanson, a retired U.S. Forest Service scientist who worked at an Oregon LTER, HJ Andrews Experimental Forest, and now coordinates its Long-Term Ecological Reflections program.

Some of the works are on display at NSF's headquarters in Arlington, Virginia. Photographs from Baltimore chronicle

plants that thrive in the city; paintings from Konza Prairie in Kansas capture the heat and drama of wildfires; a poem describes a stare-down with a spotted owl. In one installation, rows of plastic cups each cradle a live mangrove sprout that will eventually be used to restore mangrove forests in Florida.

The exhibit is not open to the public, but Swanson hopes one day to display the works of the 39 artists where anyone can enjoy them. Meanwhile, you can see some of them online at [ecologicalreflections.com](http://ecologicalreflections.com).

# Publications

- Newspaper story by participating artist Peter Porco (Fairbanks Daily News-Miner, Aug 11, 2013)
  - Including journalist is a good idea!
- *Permafrost* – UAF English department literary journal
  - Watch for the next issue, mid March!
  - Color plates of Trophic Cascades pieces
  - Peter Porco's story on the project
- Several in prep for peer-reviewed literature with LTER-wide Ecological Reflections synthesis effort
  - Michael Nelson (AND), Fred Swanson (AND), Lissy Goralnik (AND) and Mary Beth Leigh (BNZ)

# What's next at BNZ?

- ITOC: Microbial Worlds
  - Broader Impacts of NSF Ecosystems grant (PI Leigh)
  - Plan TBA – open to new ideas and models!
  - Soliciting artists in 2014-15, show in 2017?
  - UA Museum involvement?
  - Things to do differently
    - Survey data for scientists and artists before, during and after process
    - More interaction between artists and scientists during development of pieces
    - Suggestions?



- Challenges
  - 2-way exchanges, scientists visit studios, engage throughout process
  - Compensating artists
  - Branding
  - Art gallery vs. interpretive/museum setting limitations
  - Assessing impacts
  - “Intellectual integration” (Saran)
- Ideas
  - Longer term projects on a theme (Art of Fire II?)
  - Interdisciplinary classes at UAF
- Sustainability of BNZ program
  - REU program
  - New partners
  - Individual PI grants
  - Major grants for this with Ecological Reflections?

# Questions and Discussion



