

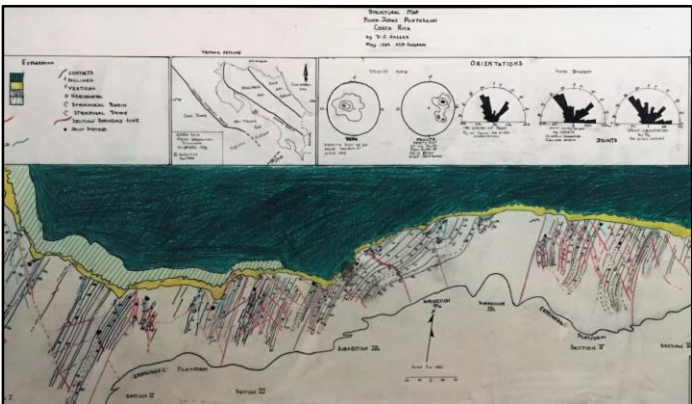
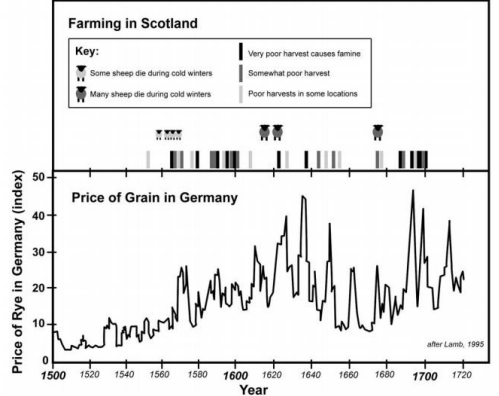
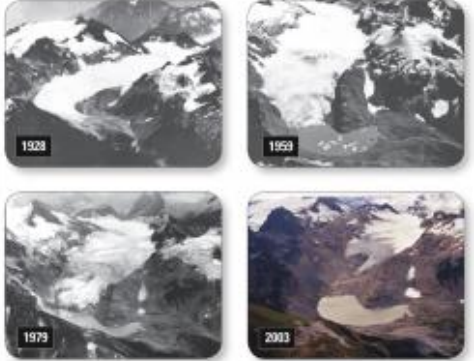
Winter Raptor  
Survey:  
From Paper &  
Pencil to Mobile  
Device

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# About

- K-12 STEM Educator
  - Classroom Teacher
  - Instructional designer
  - Program Evaluator
  - NASA, NIH, NCAR, for-profit, non-profit



**Do It!**

**Designing Blades**

All of the variables at the right can affect your blade performance. Think carefully about how they will effect your blade design. Start by drawing your blade using grid paper or computer software.

**Example:**  
 Length: 40cm  
 Width: Tapers from 10cm to 5cm  
 Thickness: airfoil shape with 1cm to 5cm to 3cm

Best Blades by Kim & Doug

Design

Evaluate

Build

Test

DRAG

WEIGHT

AERODYNAMICS

SHAPE

FLEXIBILITY

TWIST

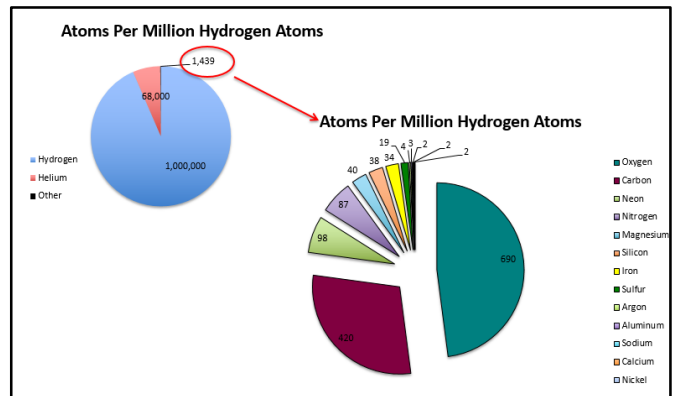
STRENGTH

CURVATURE

LENGTH

BALANCE

© Creative Learning Systems



# Goals

- Convert paper and pencil forms to online survey
- Ensure easy access and use for volunteer bird watchers
- Improve data collection, management, and analysis
- Provide a platform for development and sharing of external and internal visuals

Observer Names: \_\_\_\_\_

Temperature (°F): \_\_\_\_\_

Weather: (circle) \_\_\_\_\_

Clear \_\_\_\_\_ Partly-cloudy \_\_\_\_\_

Cloudy \_\_\_\_\_ Precipitation \_\_\_\_\_

Transect Name: \_\_\_\_\_

Date: \_\_\_\_\_

Number of Observers: \_\_\_\_\_

Wind direction: N NE NW S SE SW E W

Time Start: \_\_\_\_\_

Contact phone number: \_\_\_\_\_

Beaufort Wind speed: 0 1 2 3 4 5 6

Time End: \_\_\_\_\_

Buteos	Total	Imm or Morph	Falcons	Total	Imm or M/F	Eagles	Total	Imm or M/F	Other Raptors	Total	Imm or M/F
Ferruginous Hawk (FEHA)			American Kestrel (AMKE)			Bald Eagle (BAEA)			Northern Harrier (NOHA)		
Red-Tailed Hawk (RTHA)			Merlin (MERL)			Golden Eagle (GOEA)			Great-Horned Owl (GHOW)		
Rough-Legged Hawk (RLHA)			Prairie Falcon (PRFA)			Unidentified Eagle (UNEA)			Sharp-shinned Hawk (SSHA)		
Harlan's Red-Tailed Hawk			Unidentified Falcon (UNFA)			Other Eagles:			Cooper's Hawk (COHA)		
Unidentified Buteo (UNBU)			Other Falcons:						Northern Goshawk		
Other Buteos:									Unidentified Raptor (UNRA)		
									Other Raptors:		

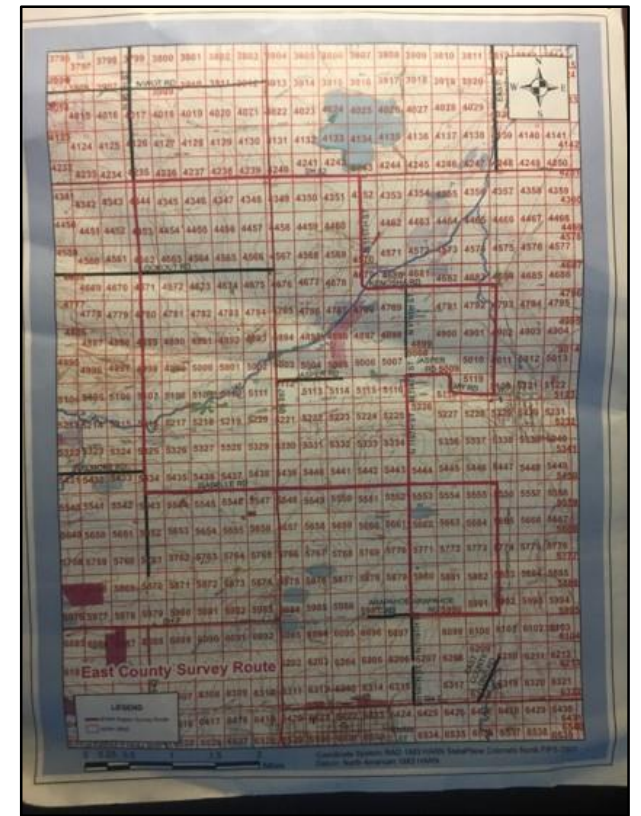
**Raptor Codes:**

PRFA: Prairie Falcon  
 AMKE: American Kestrel  
 BUOW: Burrowing Owl  
 COHA: Cooper's Hawk  
 EASO: Eastern Screech Owl  
 FEHA: Ferruginous Hawk  
 GHOW: Great-horned Owl  
 RLHA: Rough-legged Hawk  
 RTHA: Red-tailed Hawk  
 SEOW: Short-eared Owl  
 SSHA: Sharp-shinned Hawk  
 SWHA: Swainson's Hawk  
 TLVU: Turkey Vulture

**Beaufort Wind Scale:**

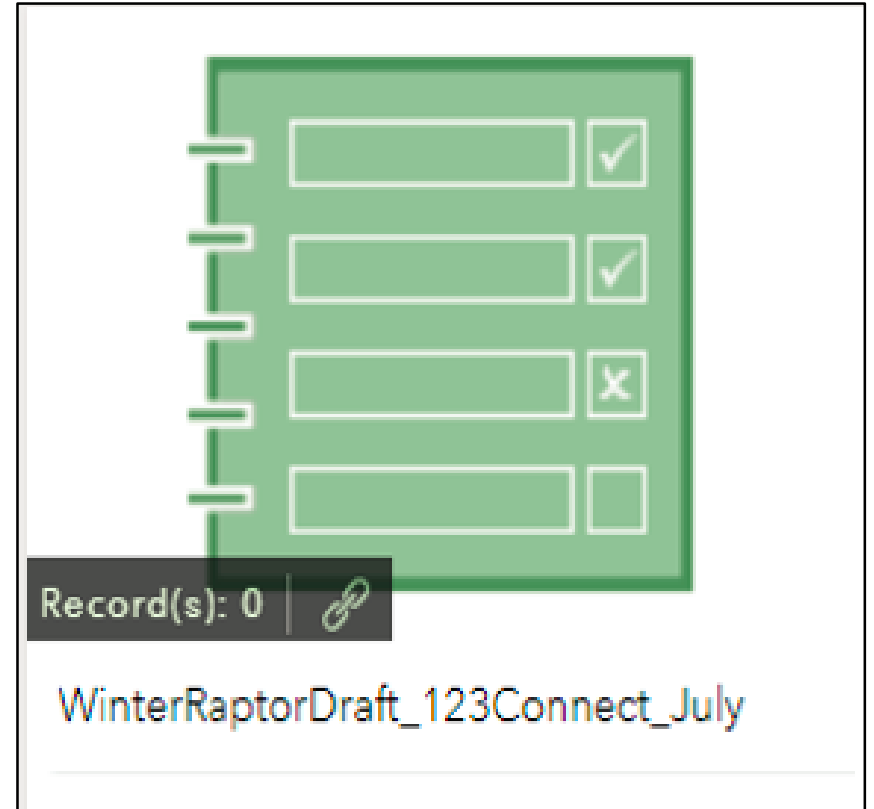
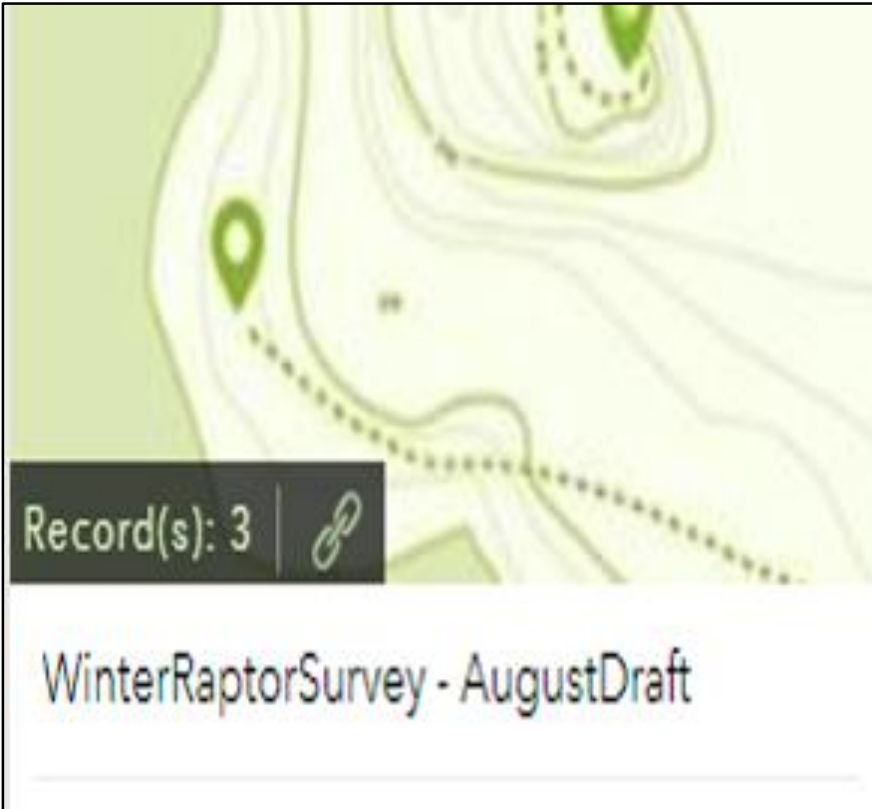
0: 0-1mph (calm)  
 1: 1-3mph (smoke drifts)  
 2: 4-7mph (wind felt on face)

Mark all raptors sighted on the accompanying map. Place a dot where the raptor was first sighted, then write the raptor code next to the dot. Use one dot per raptor sighted.



# Process

- Identify and review survey software options
- Select survey software based on ease of use for volunteer and county staff
- Develop and test survey from perspective of multiple audiences
- Pilot test and revise survey based on end user comments
- Share survey with county staff



# Challenges

- Selecting most appropriate software: Survey123 vs Survey123 Connect
- Developing survey with 1 to Many relationship; birds sighted to location
- Learning xlsForms
- Anticipating audience needs and abilities
- Converting survey to Web App (next step)

type	name	label
<b>begin group</b>	<b>GroupViolation</b>	<b>&lt;center&gt;Violation Details&lt;/center&gt;</b>
dateTime	ReportDateTime	Date & Time Observed:
select_multiple violationTypes	ViolationType	Type of Violation
text	ViolationType_Other	Other Violation Description
text	ReportNotes	Notes:
image	ViolationPhoto	Photo
geopoint	ViolationLocation	Location
<b>end group</b>		
<b>begin group</b>	<b>GroupViolator</b>	<b>&lt;center&gt;Offender Details&lt;/center&gt;</b>
select_one responsiblePartyType	ResponsibleParty	Type
text	OffenderName	Offender's name
select_one yes_no	OffenderPresent	Is Offender or Representative Present at Time or Report?
image	Signature	Signature
<b>end group</b>		
note	Note	<b>&lt;center&gt;&lt;a href="tel:9093624397"&gt;Call Water Department&lt;/a&gt;&lt;/center&gt;</b>

**WinterRaptorSurvey\_AugustDraft**

Draft survey for Winter Raptor volunteers

**Date \***  
Use the calendar to enter the Observation Date.

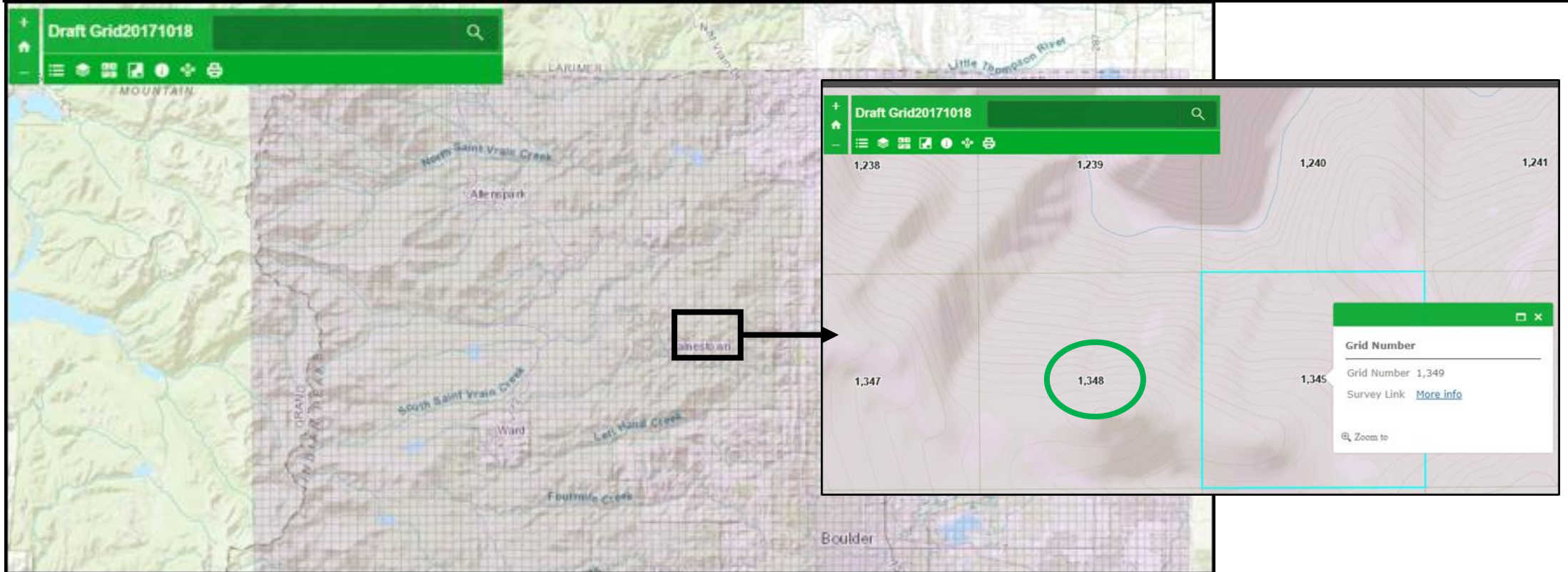
**Name \***  
Please enter your first and last name.

**Participants**  
How many total participants observed?

**Phone number**

# Successes

- Engaged cohort of volunteers open to using mobile devices in field
- Addressed a project that would otherwise have continued to gather dust
- Basic online survey functional
- Initial xlsForm created from Survey123 product
- Initial Web App using grid overlay with URL pop-up to online survey



# Next Steps

- Update xlsForms to include automatic population of location and date information
- Pilot test Survey123 Connect using off-line mobile devices
- Update xlsForms/Survey123 Connect based on audience feedback with respect to using a web app

The image shows two overlapping screenshots. The left screenshot is the Survey123 for ArcGIS interface for a 'Bikeshare Inspection Report'. It features a 'Bike Station ID' field with the value '31005', a 'Location' field, a map showing a street view, and several input fields for bike counts and issues. The right screenshot is a file explorer window showing a directory of files related to the 'Bikeshare - Webform' project, including various document, image, and data files.



Winter Raptor Survey:  
From Paper & Pencil to Mobile Device

# Questions?

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