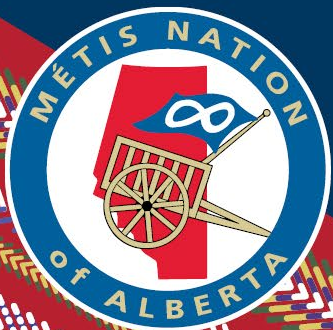


# Braided Ways of Knowing

A culturally-relevant approach to  
fish monitoring

Christine Grams | Environment Coordinator

Tracey Hammer | Data Management Coordinator



# Table of Contents

## 1. Introduction to the Askîy Initiative

- Initial engagements
- Program development

## 2. Askîy Fish Health Monitoring Projects

- Community monitor reporting forms



## 3. Community reporting form data

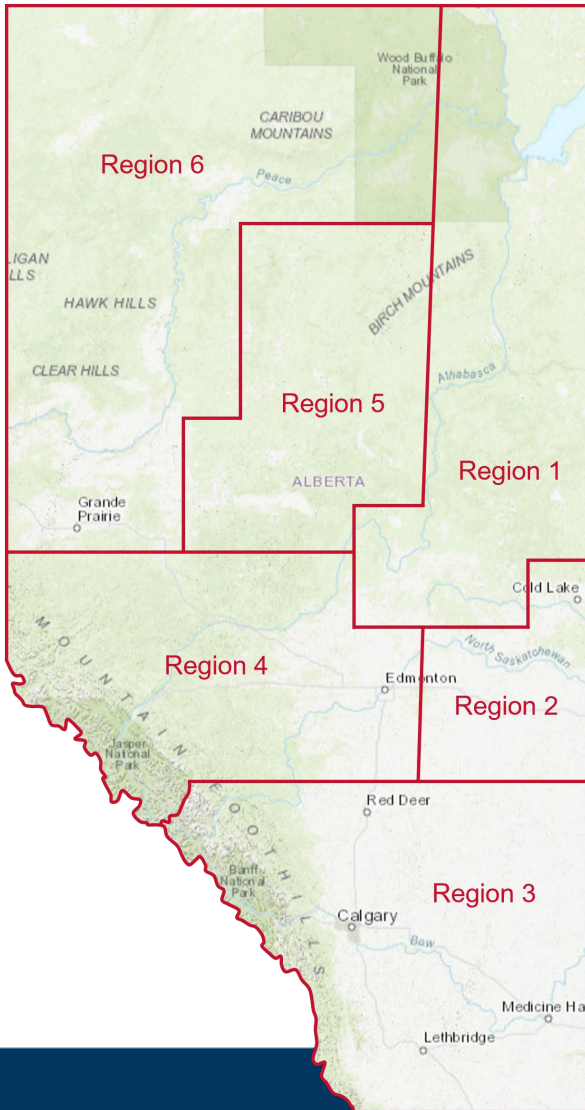
- Braided traditional knowledge & western science

## 4. Next Steps





# Métis Nation of Alberta Monitoring



## Askîy (Earth) – an ICBCM project

- The MNA's community-based monitoring initiative
- Designed based on 21 engagement sessions held in 2018

**Core Values**



How would a Métis Monitoring Program be carried out? What are the main components?

**Environmental Concerns**

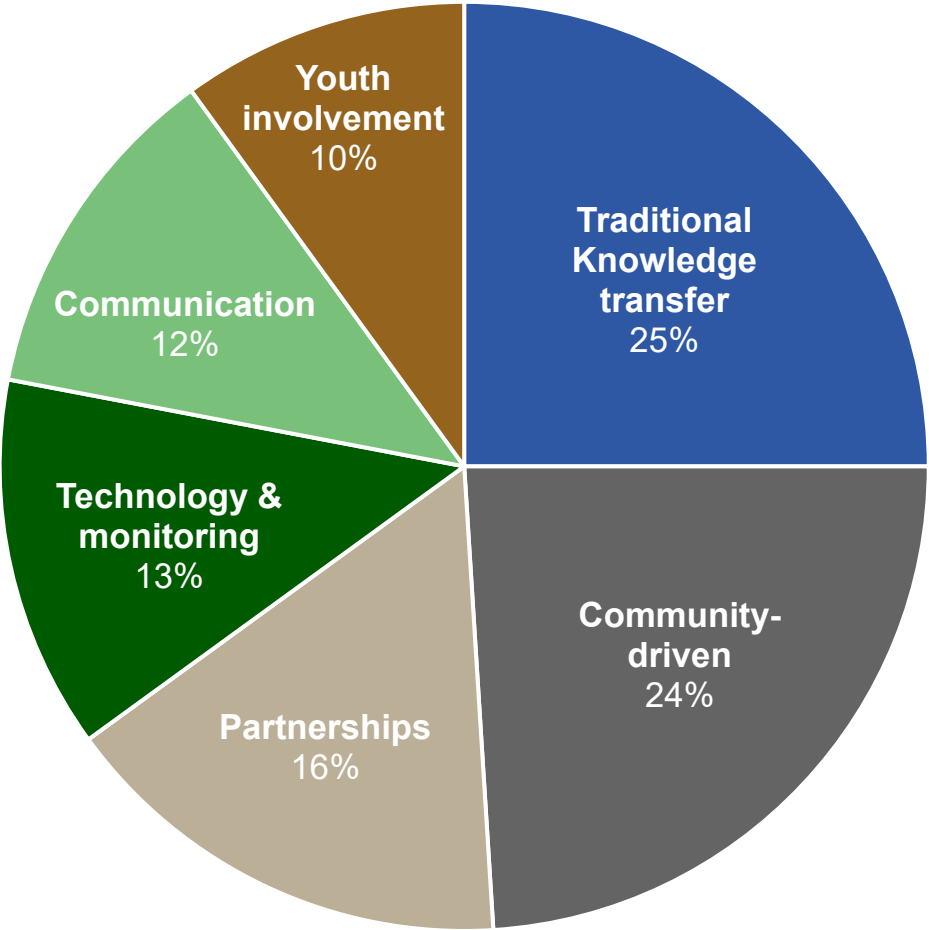


What are some key areas of concern (in terms of climate and environment) in your Region?

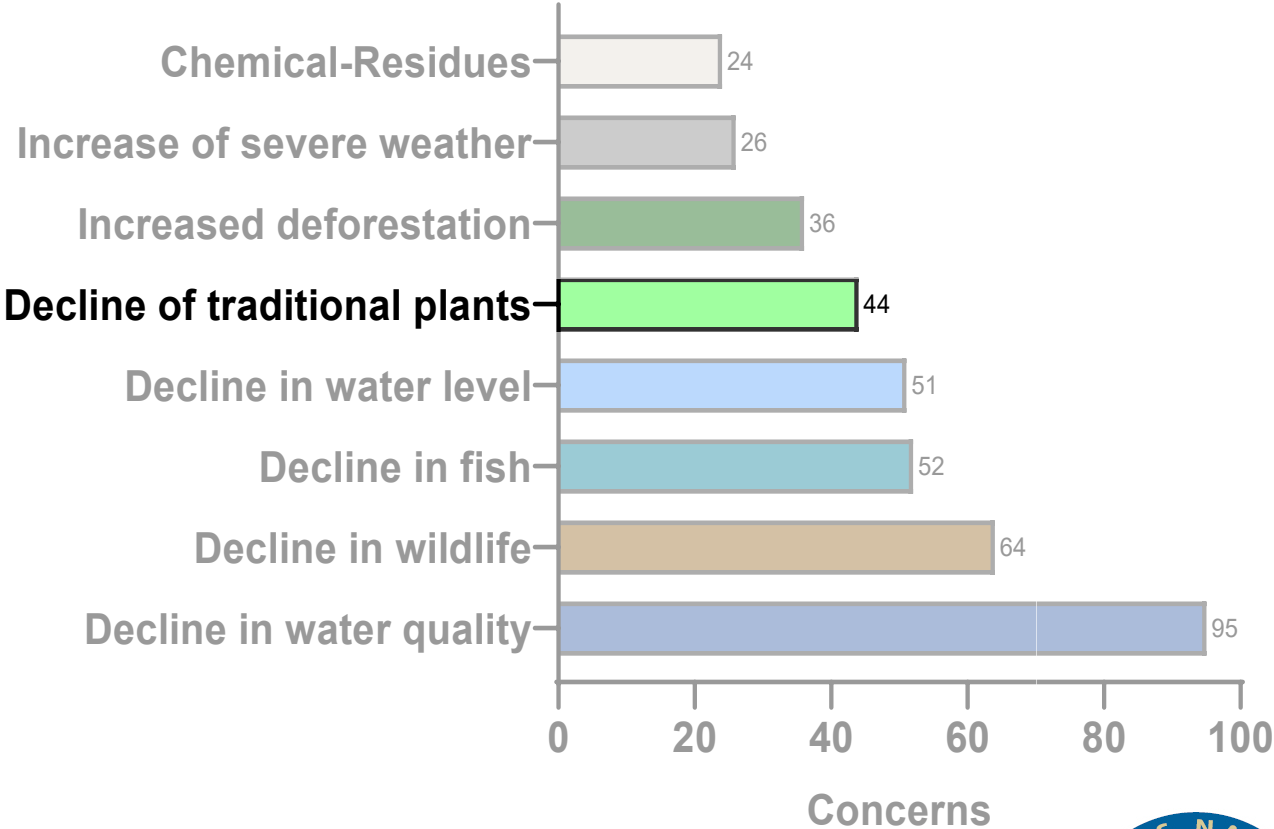


# Building Askîy – How should we monitor?

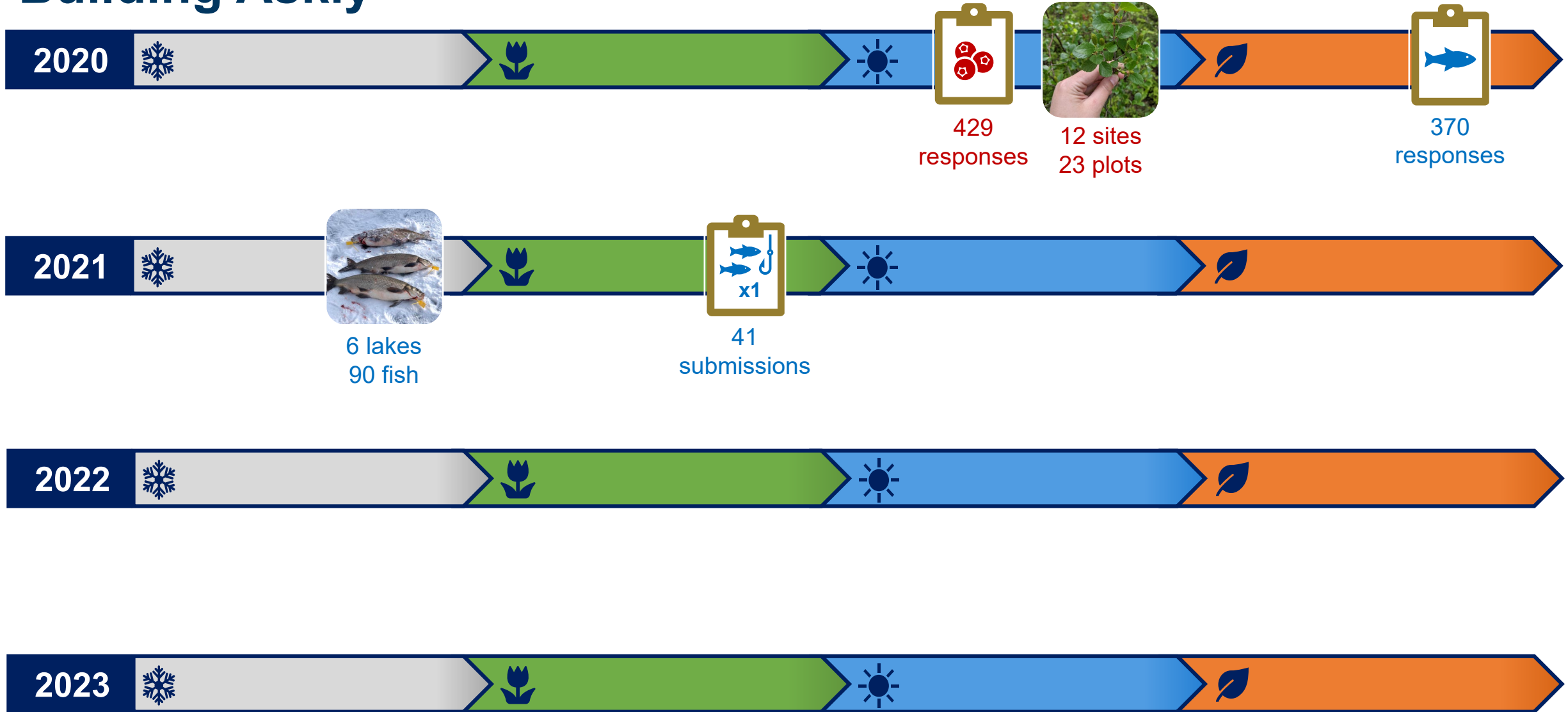
### Core Values



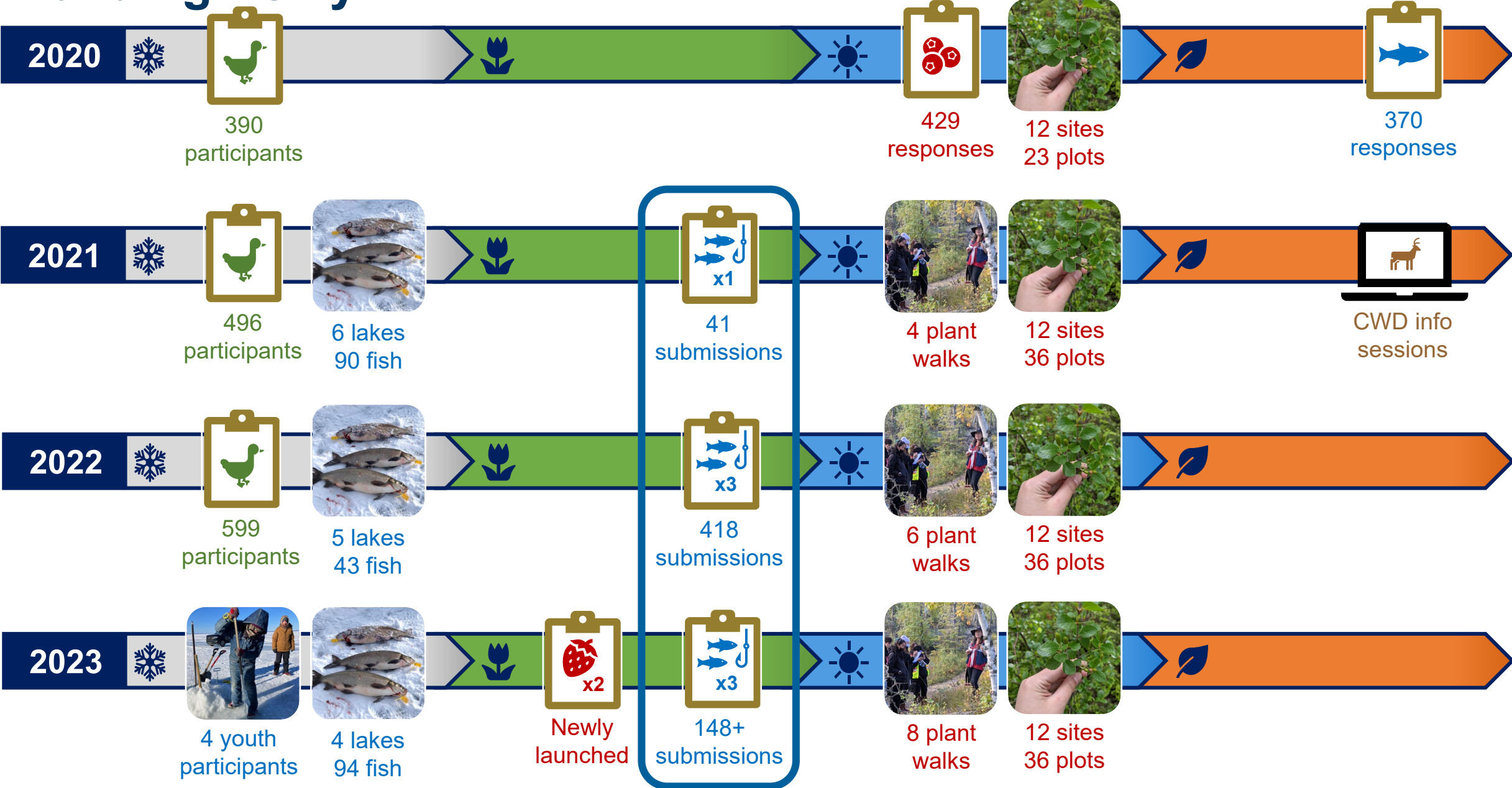
### Environmental Concerns



# Building Askîy



# Building Askîy





# Fish Health Community Monitoring Forms

## Created in 2021 to complement targeted ice fishing

- Internal fish health & palatability

## Expanded in 2022 to engage more Métis harvesters

1. Fishing trip experience
2. Fish health & measurements
3. Fish palatability

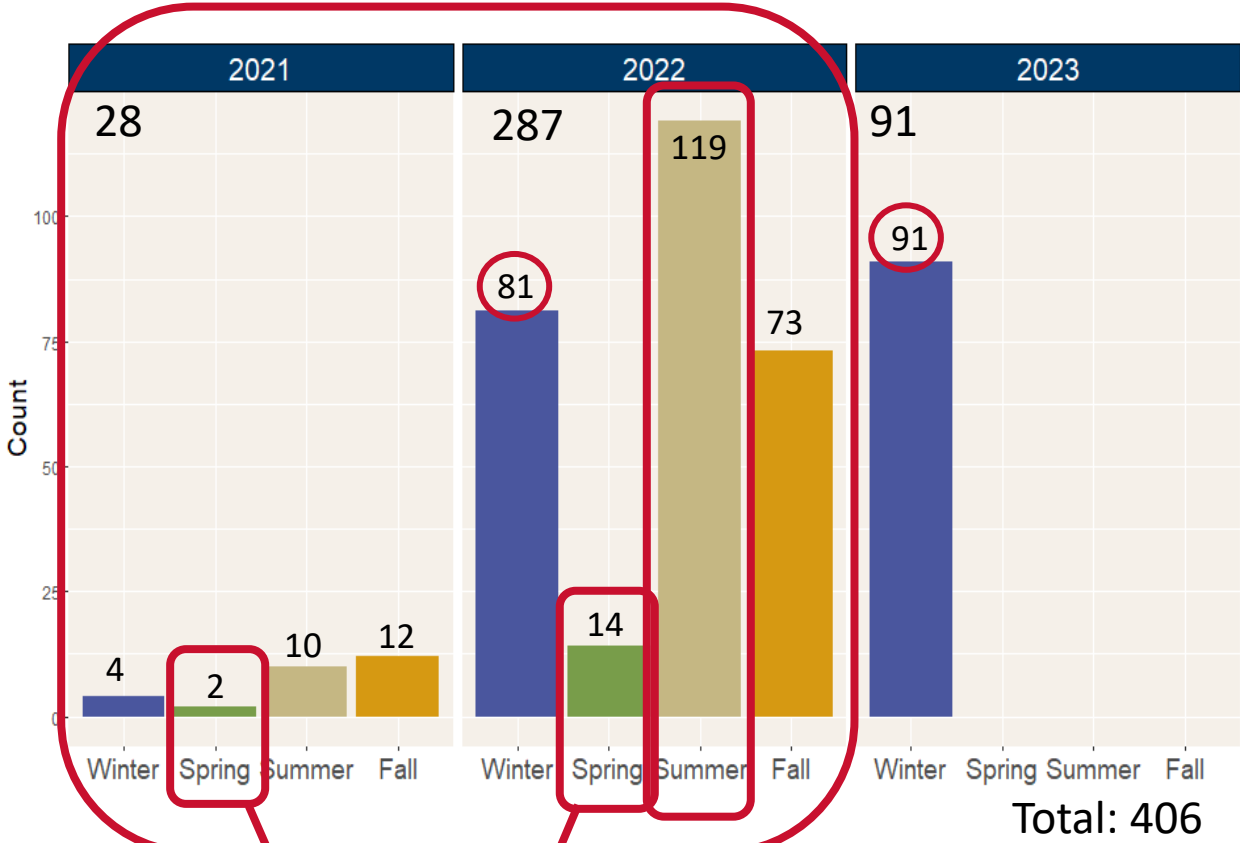
- Feedback received from:
  - 20 Métis harvesters
  - Askîy Advisory Committee
  - Dr. Vanessa de Koninck, OSM Interdisciplinary Social Scientist

## Promotion & incentives

- MNA social media accounts
- MNA Annual General Assembly
- Seasonal gift card draws
- Commemorative coin



# Number of Fishing Trips



We don't encourage fishing during spring

Winter	Spring	Summer	Fall
Jan 1 – March 31	Apr 1 – May 30	Jun 1 – Aug 31	Sept 1 – Dec 31

Season  
 Winter  
 Spring  
 Summer  
 Fall

## Take-aways

1. Not much fishing in Spring
2. Took about a year to really get going
3. Summer is the most popular time to fish
4. We are still expanding our reach

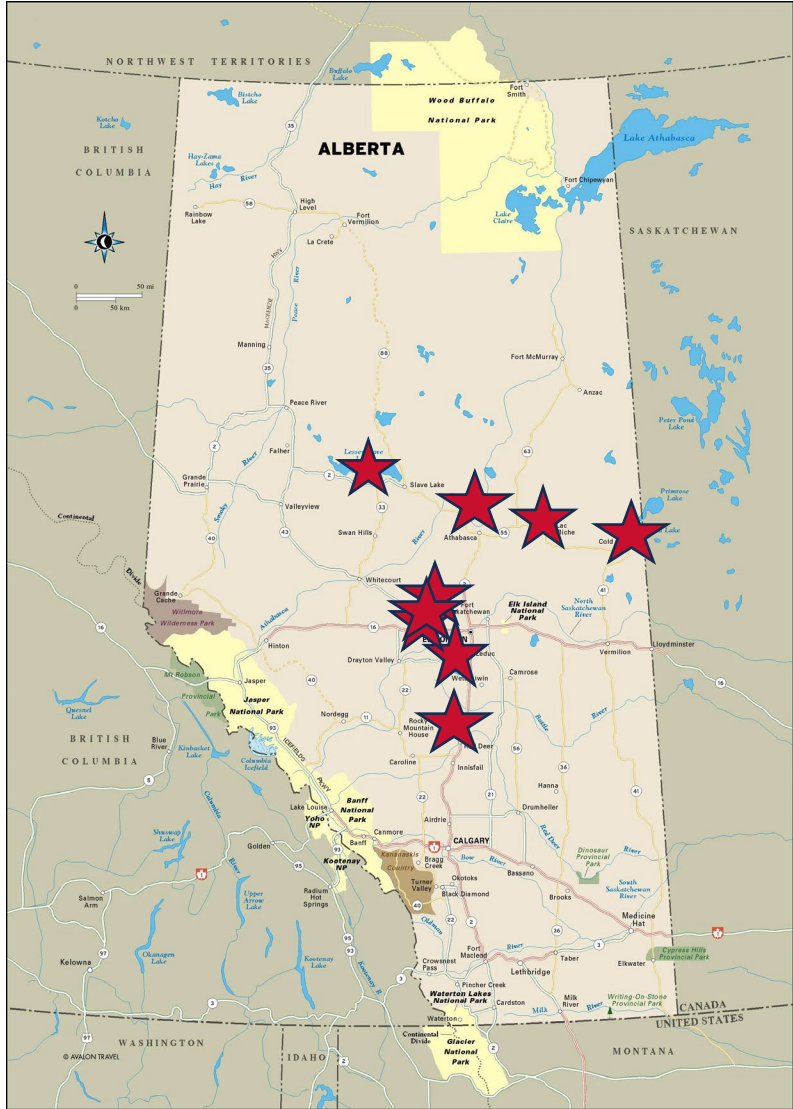
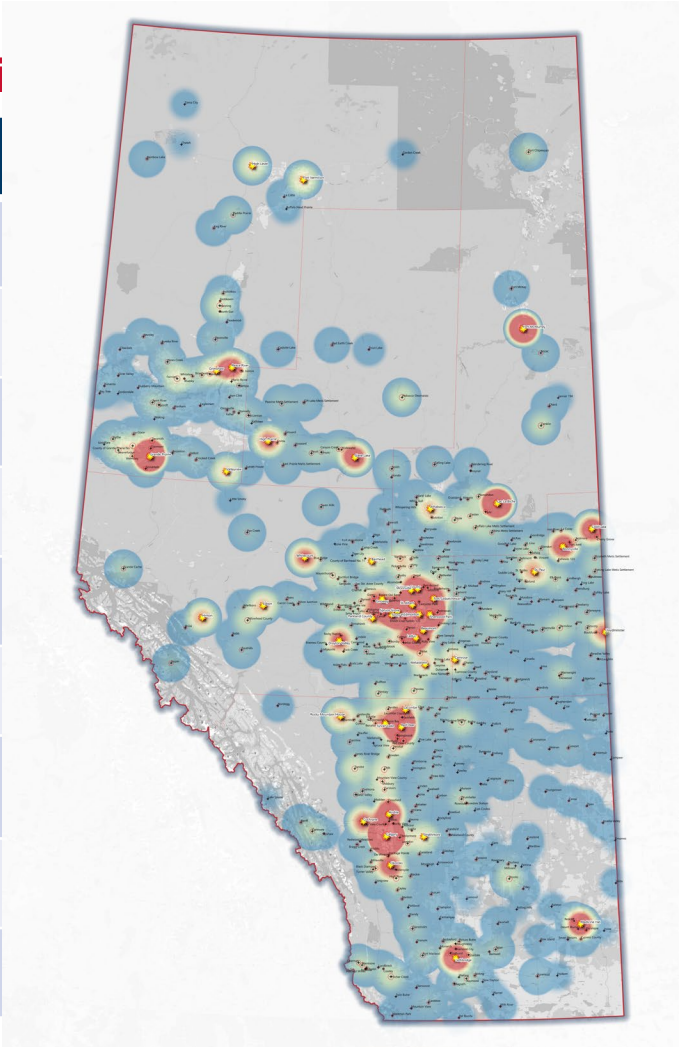




# Most Popular Waterbodies

406 total respondents visi

Waterbody
Lesser Slave Lake
Lac La Biche
Pigeon Lake
Wabamun Lake
Lac La Nonne
Lac Sainte Anne
Calling Lake
Cold Lake
Gull Lake



# Webmap of Trip Data

- To be released to citizens shortly
- Interactive map

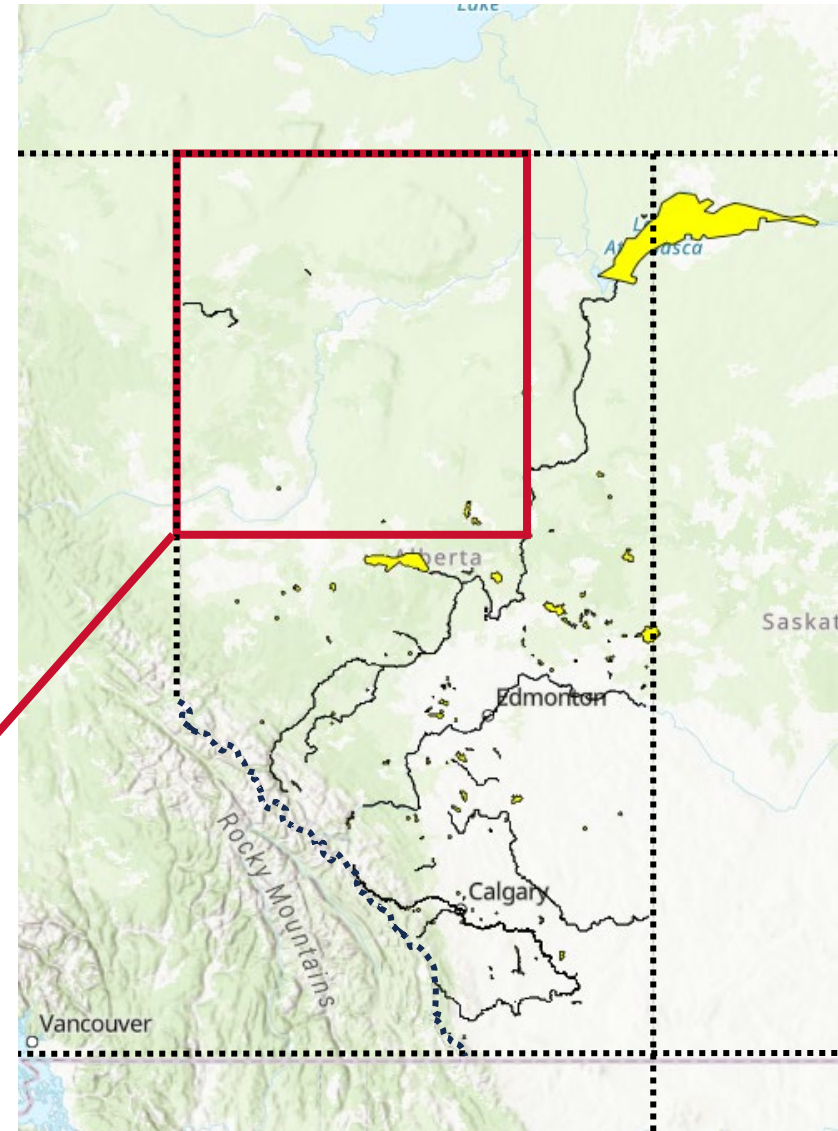
## Waterbody-specific

1. Fishing trip information
2. Fish size
3. Fish health
4. Fish palatability

Why could this pattern appear?

Either:

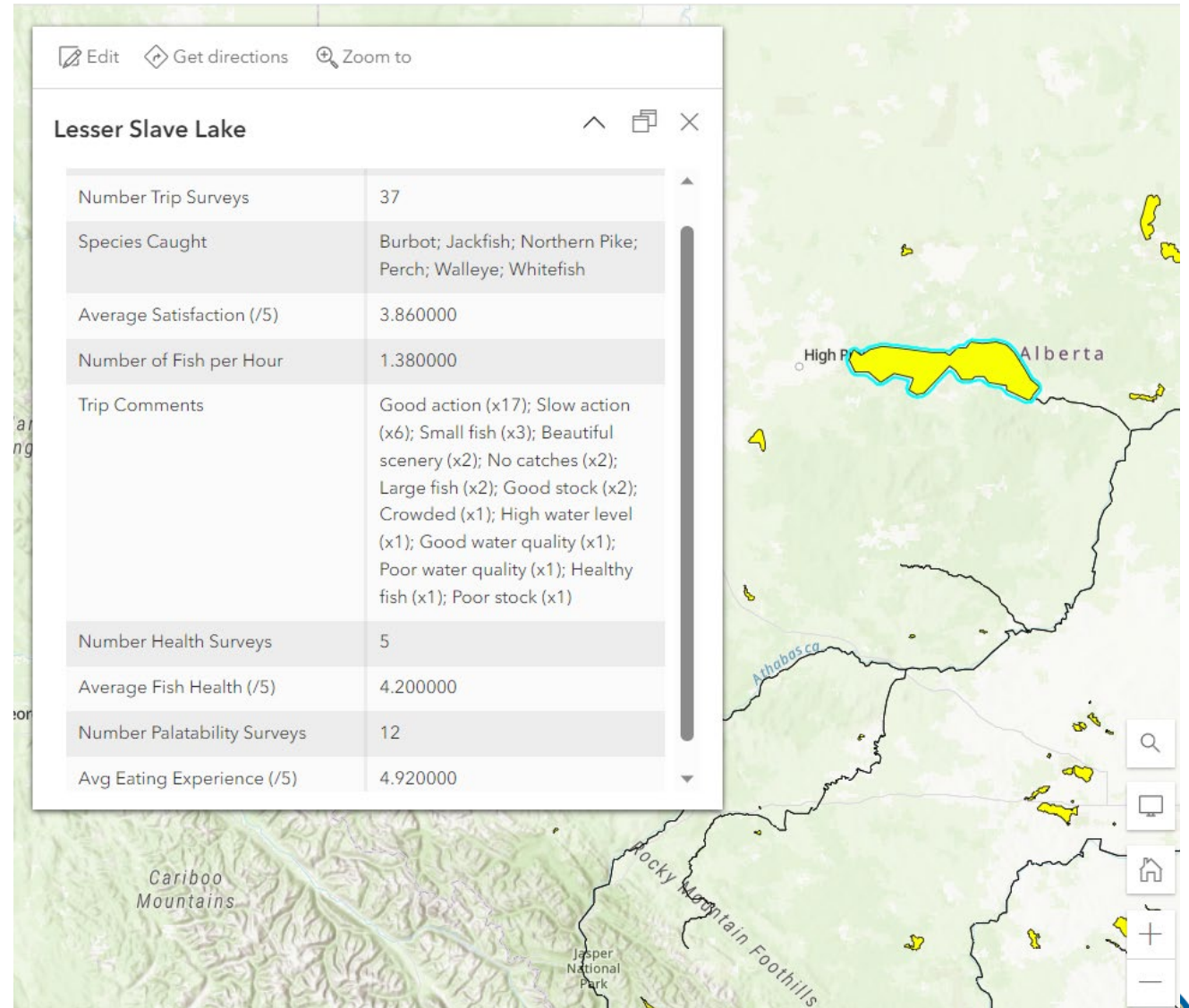
- Fewer trips taken in this region
- Poor reach to harvesters in this region



# Waterbody Specific Data

Click on the waterbody to see pop-up information including:

1. Number of trips
2. Species caught
3. Avg satisfaction (/5)
4. Fishing rate (# fish/hour)
5. Trip comments
6. Number health surveys
7. Avg fish health (/5)
8. Number palatability surveys
9. Avg eating experience (/5)





# Future Data Uses

## Within-year analyses

- Catch rate (# fish/hour) for all species combined

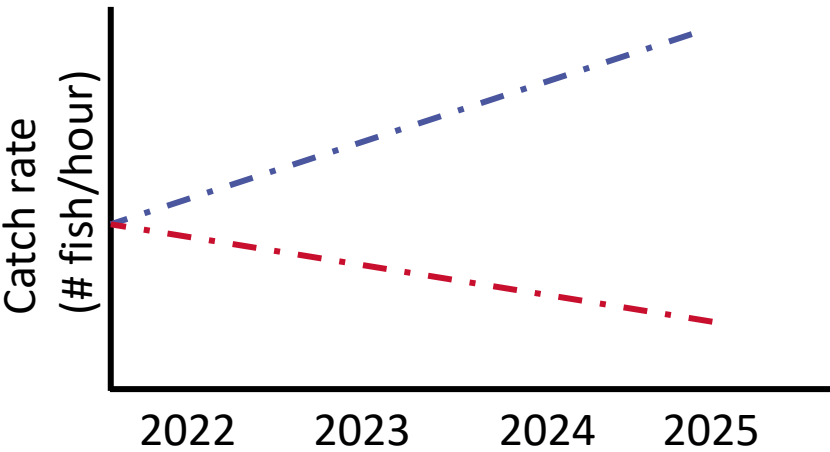
Waterbody	Summer		Fall		Winter	
	Catch Rate	N =	Catch Rate	N =	Catch Rate	N =
Lac La Biche	<b>1.90 ± 0.87</b>	<b>5</b>	0.88 ± 0.43	3	1.09 ± 0.21	15
Lac La Nonne	0.38 ± 0.24	4	0.22	1	<b>0.93 ± 0.30</b>	<b>8</b>
Lac Sainte Anne	0.67 ± 0.23	4	<b>0.85 ± 0.52</b>	<b>4</b>	0.48 ± 0.12	4
Lesser Slave Lake	<b>2.05 ± 0.50</b>	<b>12</b>	1.96 ± 1.76	2	0.89 ± 0.16	17
Pigeon Lake	<b>7.99 ± 2.88</b>	<b>3</b>	4.01 ± 2.62	6	0.94 ± 0.41	5
Wabamun Lake	1.94 ± 0.82	3	<b>6.33 ± 2.80</b>	<b>3</b>	1.14 ± 0.29	14

↪ With more data, could look at species-specific results

## Between-year analyses

Are fishing rates increasing or decreasing over time?

- By waterbody
- By species within waterbody






↪ Can flag areas of concern









# Concerns Raised by Harvesters

## Lac La Biche (N = 28):

- Slow action (50%) 
- Healthy fish (29%) 
- Large fish (39%) 

## Wabamun Lake (N = 20):

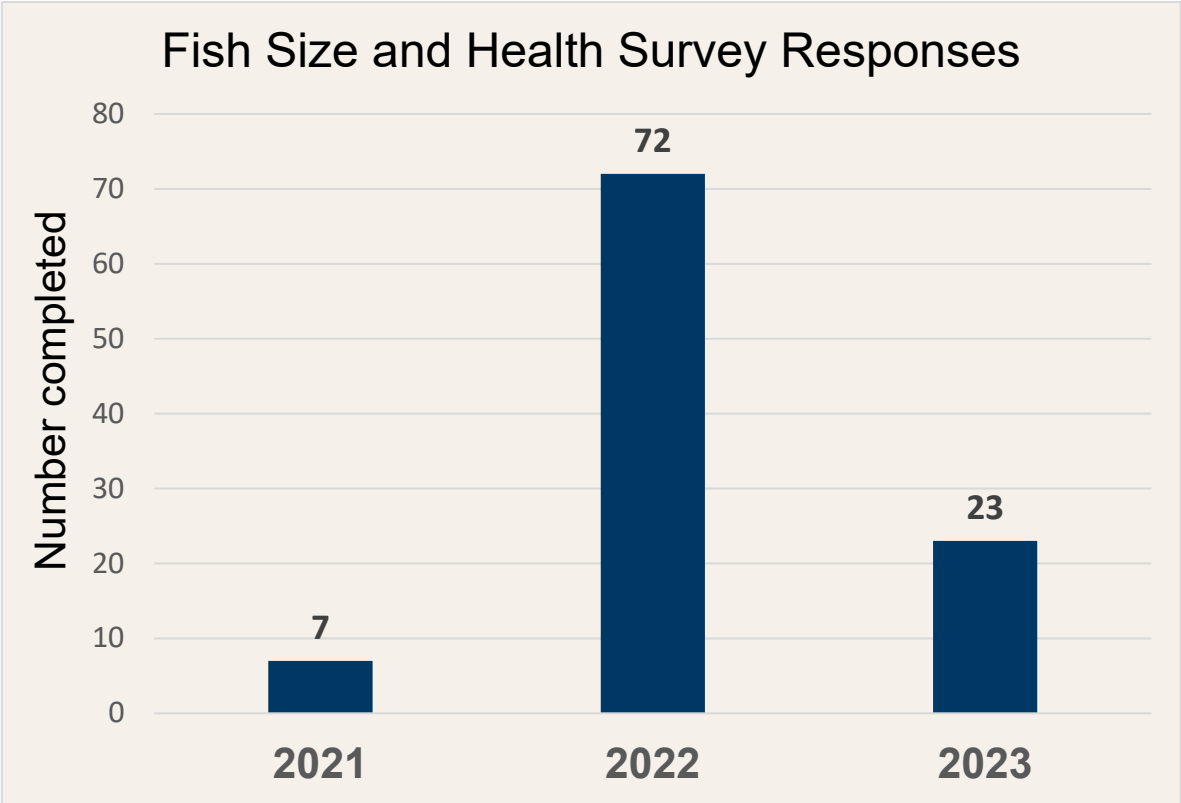
- Good action (40%) 
- Unhealthy fish (15%) 
  - Growths, skinny
- Small fish (20%) 
- Poor stock (20%) 

Topic	Negative	Positive
Action	Slow/no action - 19%	<b>Good - 24%</b>
Success	No - 20 %	<b>Yes - 31 %</b>
Fish size	<b>Small = 14%</b>	Large = 10%
Fish health	Poor = 3%	<b>Good = 12%</b>
Water quality	Poor = 5%	Good = 5%
Fish stock	Poor = 4%	Good = 5%
Human activity	Crowded = 3%	Secluded = 2%

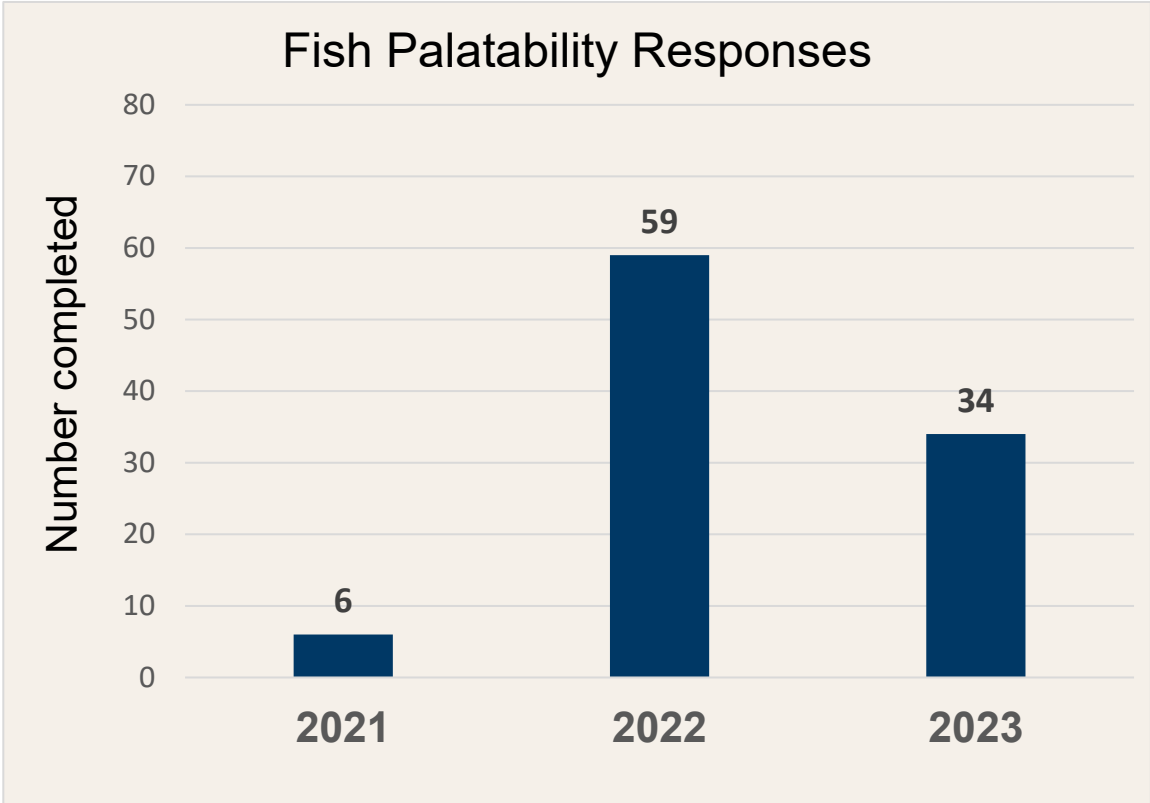




# Fish Size and Health, Fish Palatability



**Total = 102**

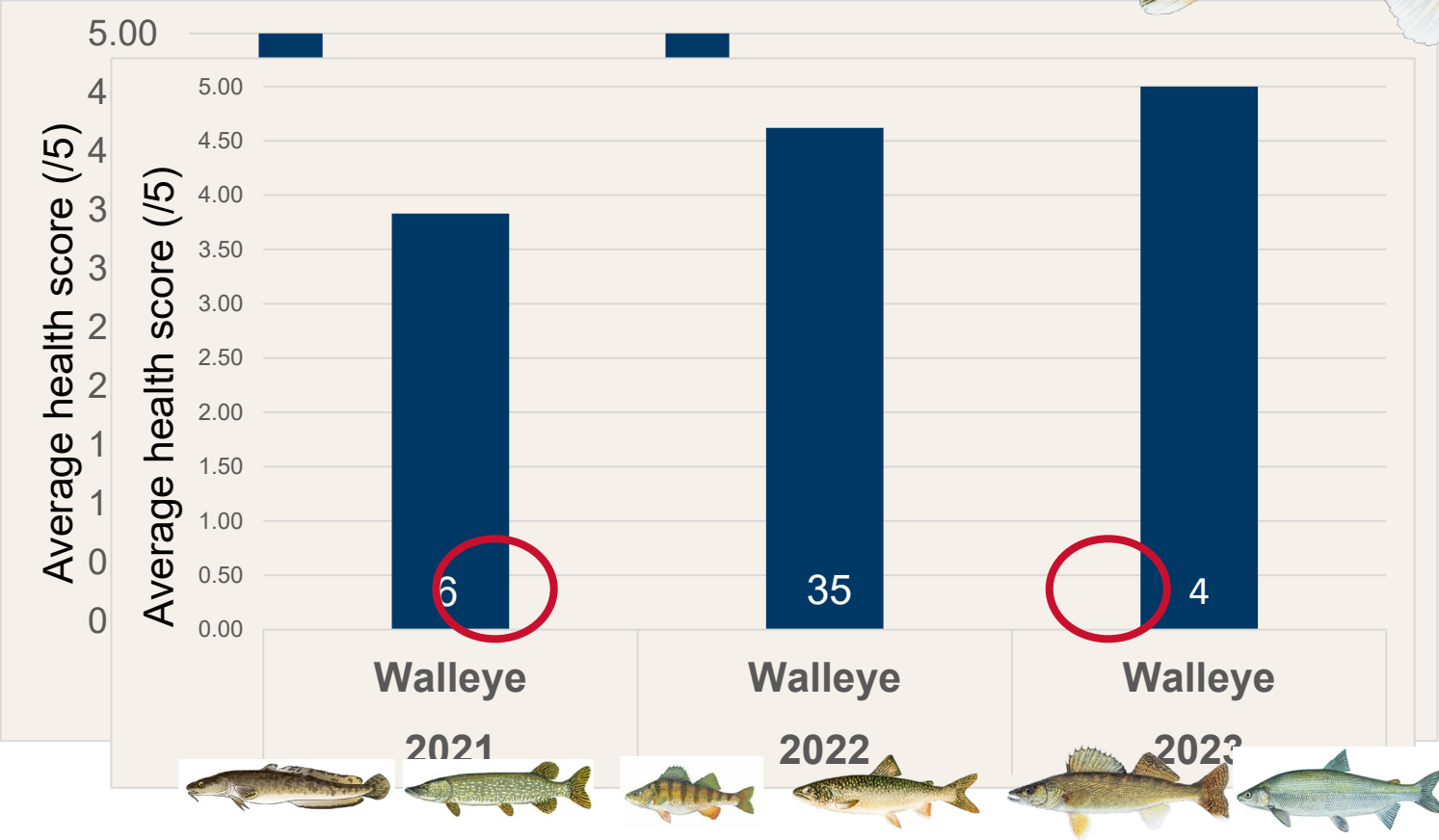
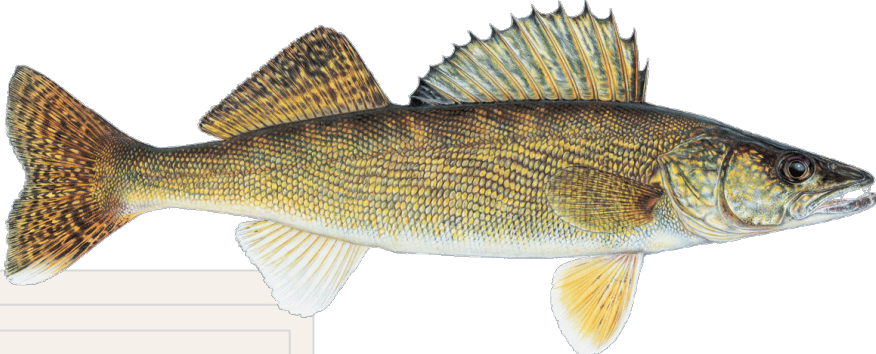


**Total = 99**



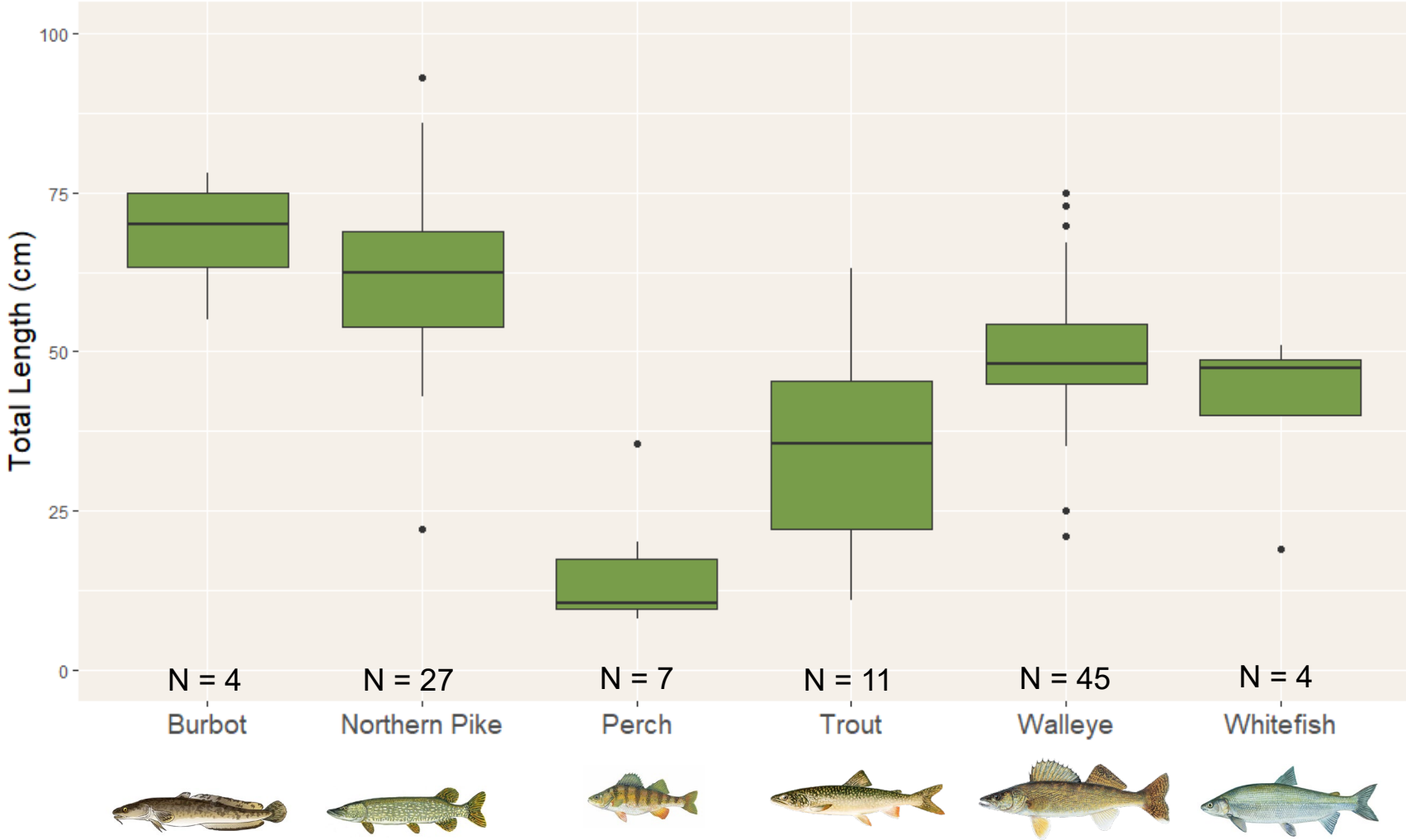
# Fish Health

- Scored from 1 – 5 (5 = very healthy)





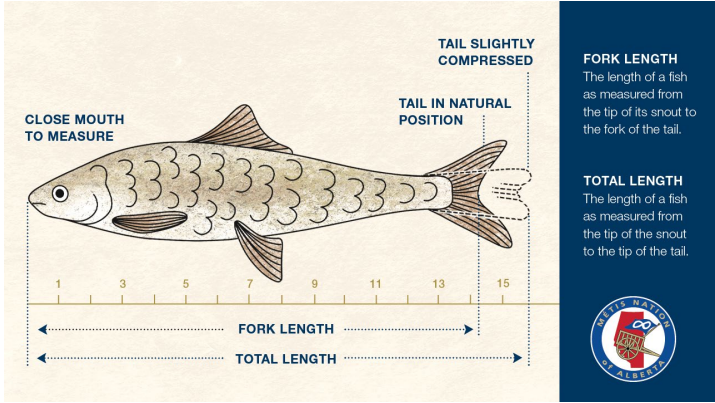
# Fish Size



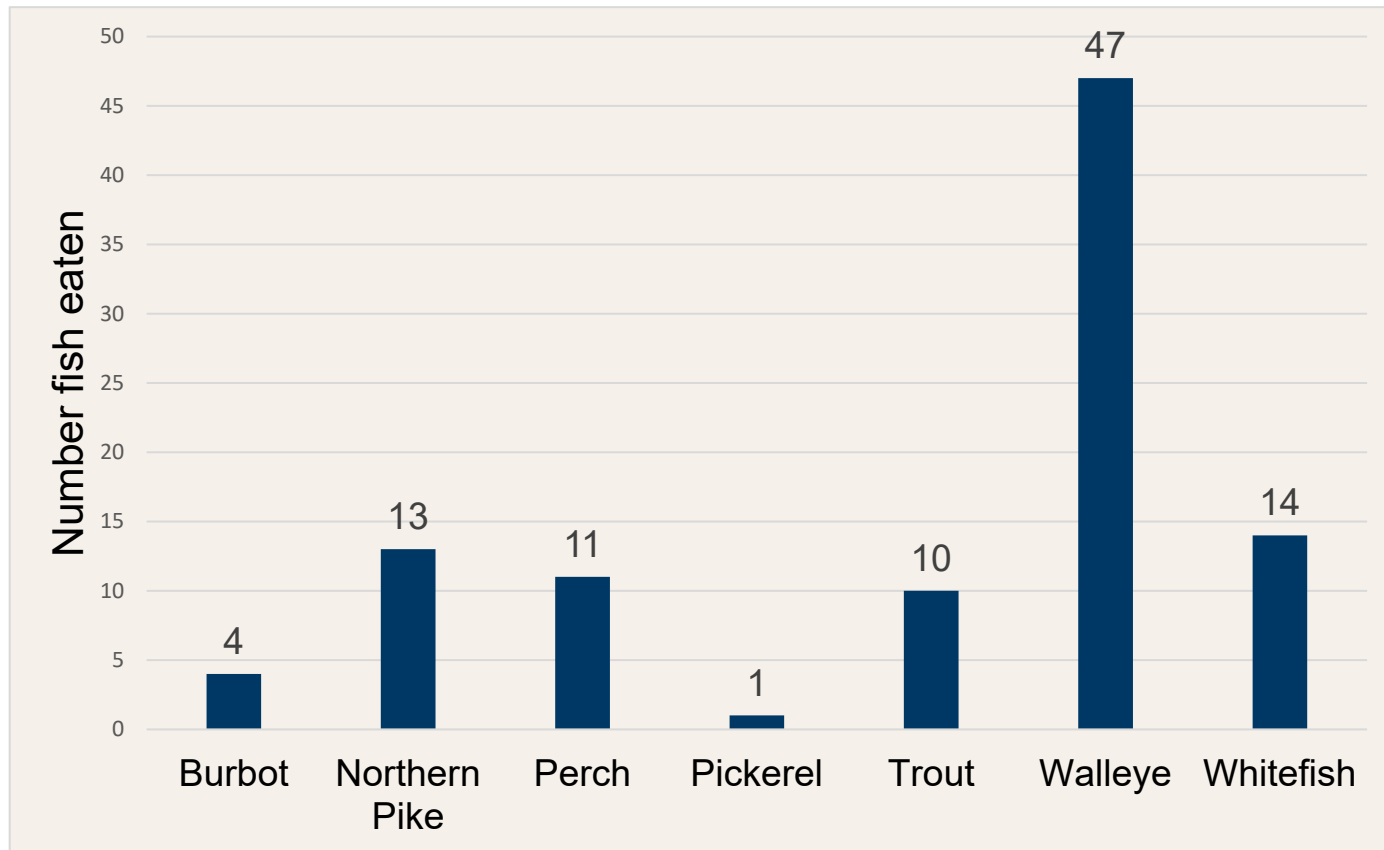
People tend to only measure keepers

- Potential bias towards larger sizes

People had a hard time measuring fork length and weight



# Fish Species Eaten

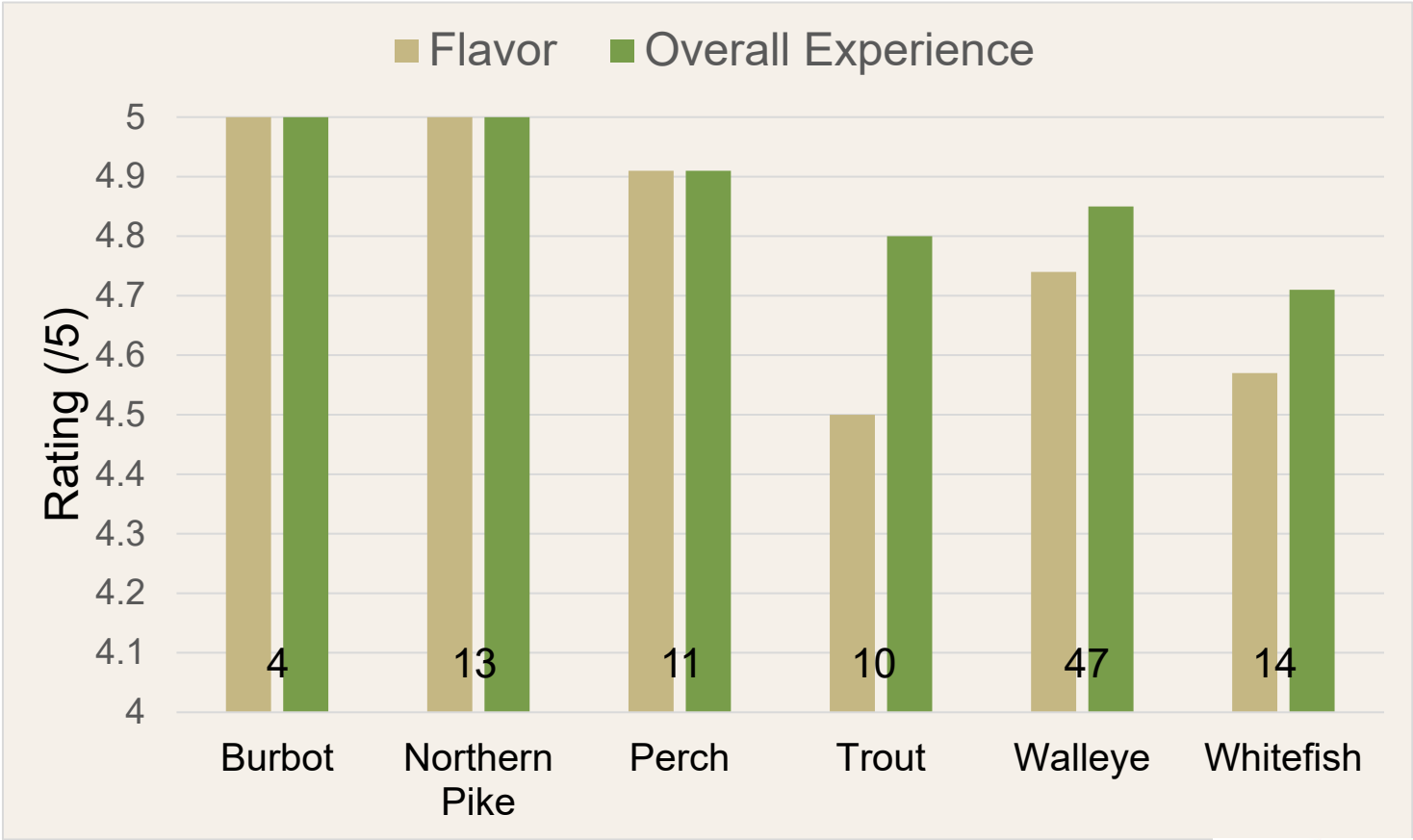


## Other results:

- Most fish **eaten with family (70.5%)**, or in a mixed group (22.7%) with elders, friends, and/or youth
- Most fish were **fried (71.8%)**, baked (8.2%), or smoked (8.2%)



# Eating Experience



# Next Steps

- Collect more survey responses to observe changes over the years
- Use data to inform locations for further monitoring
  - Ice fishing, toxicology sampling
- Increase outreach to north-western Alberta
- Provide harvesters with measuring tools
- Calculate economics of fishing
  - Including better measures of effort and sufficiency of catch







# Questions?

Environment and Climate Change

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