

*“Synchrosmolt”*  
*2020-2022*

28 November 2019

## NOFIMA



Ytrestøyl



Gjerde



Difford

## MOWI



Baranski



Boison

## UiT



Jørgensen & Hazlerigg

## NMBU



Mørkøre



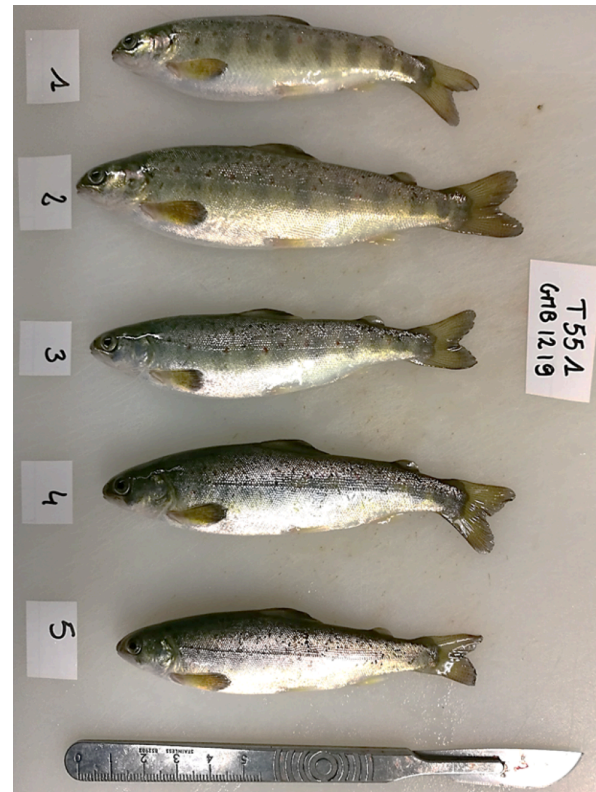
Sandve

# Utfordringen

Ideell smoltpopulasjon

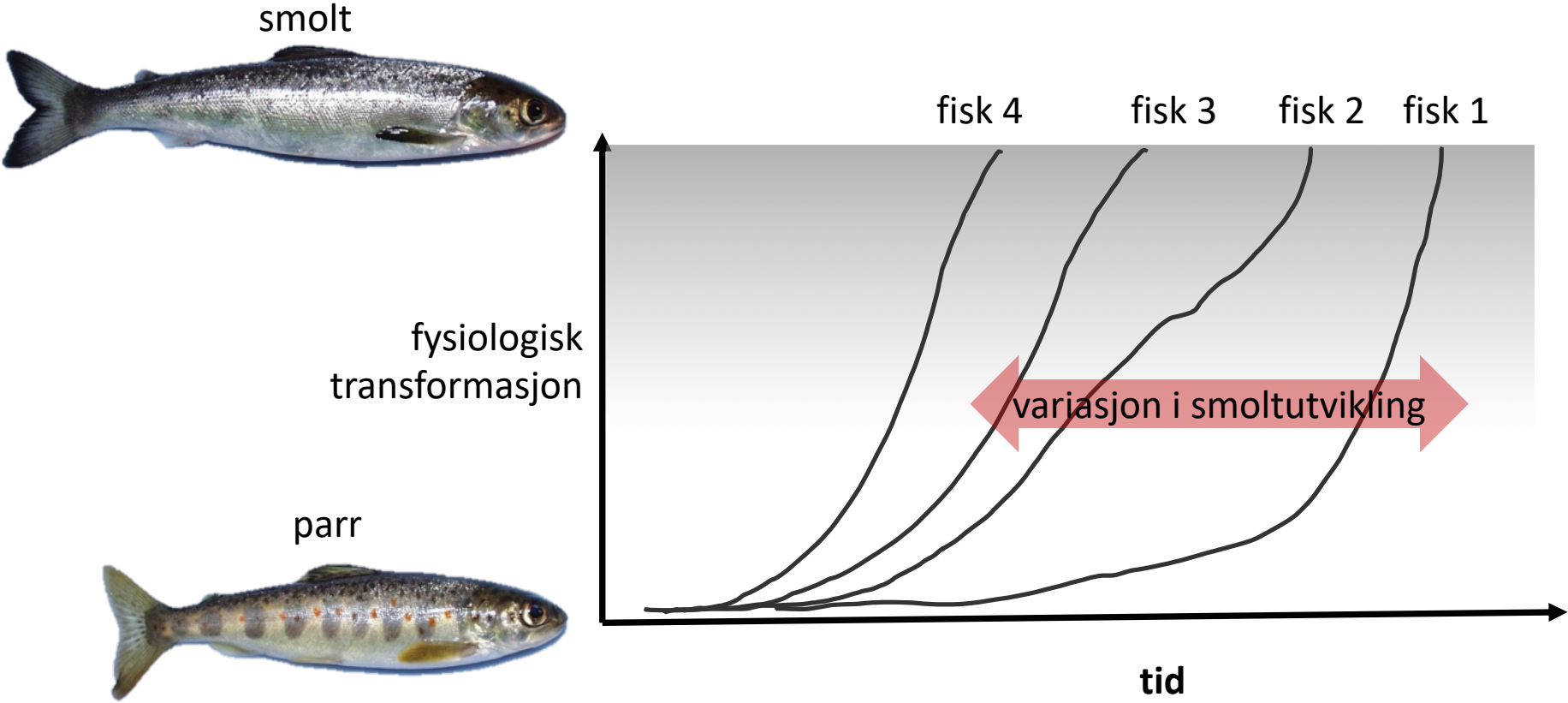


Faktisk smoltpopulasjon



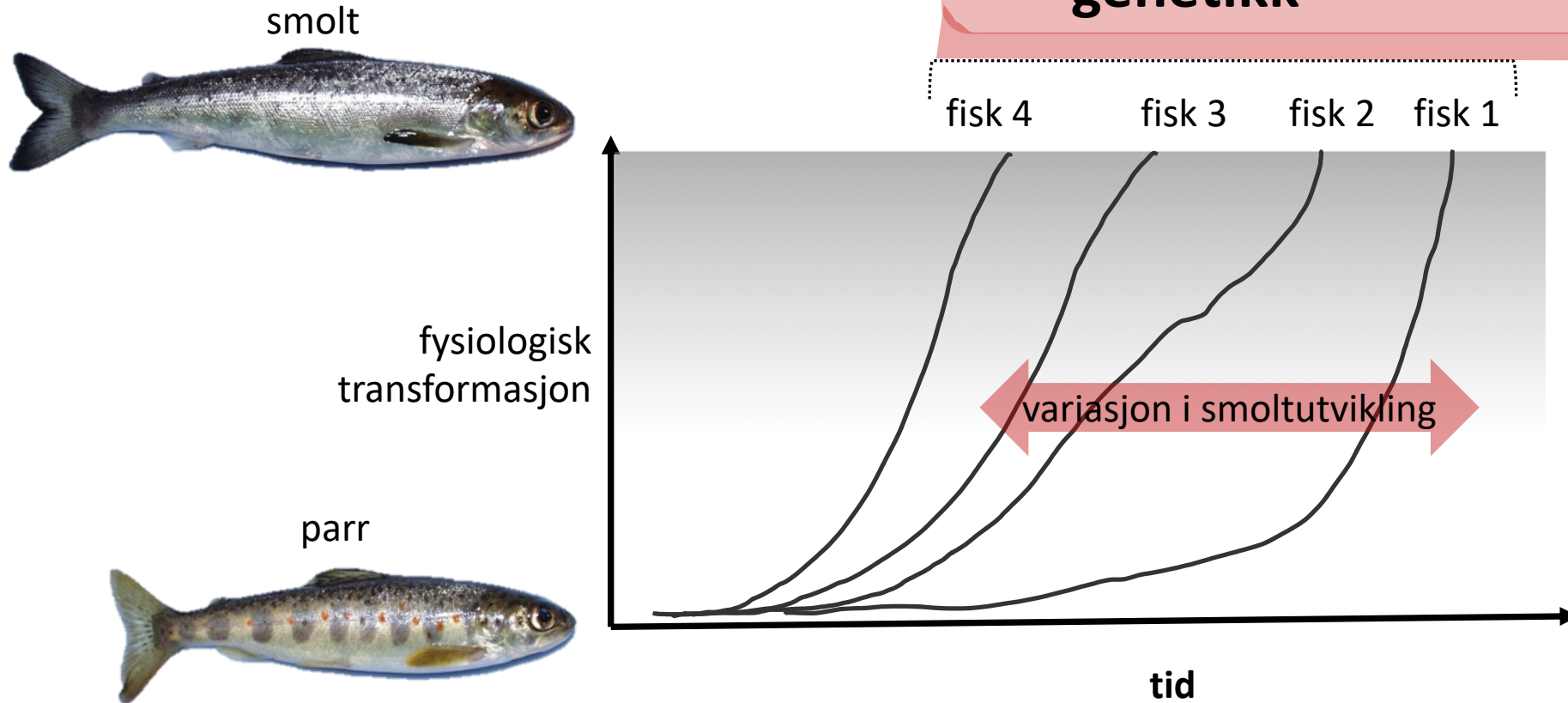
bilde: Turid Mørkøre

# Stor variasjon i smoltutvikling

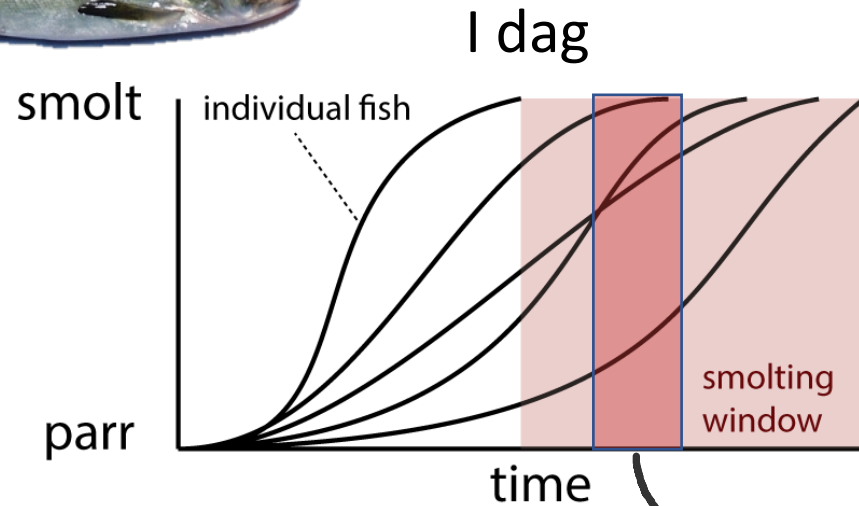


# Stor variasjon i smoltutvikling

- miljøfaktorer
- genetikk



# Prosjektkonsept: "øke andelen fisk som er klare for havet"



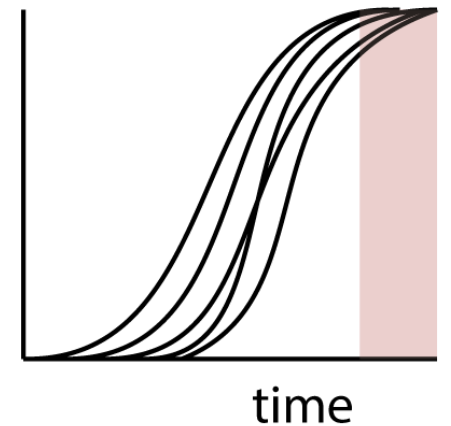
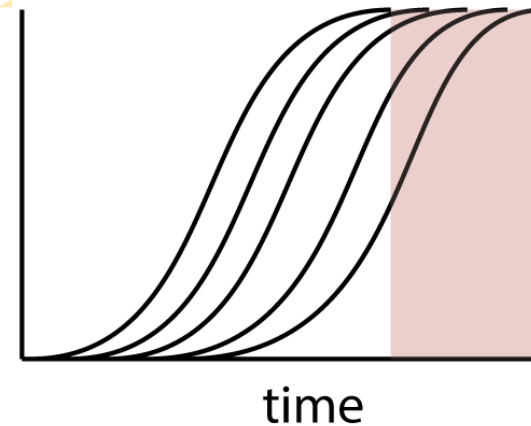
stor variasjon i utviklingsstadiet

## Synchrosmolt

optimalt lys

optimalt lys

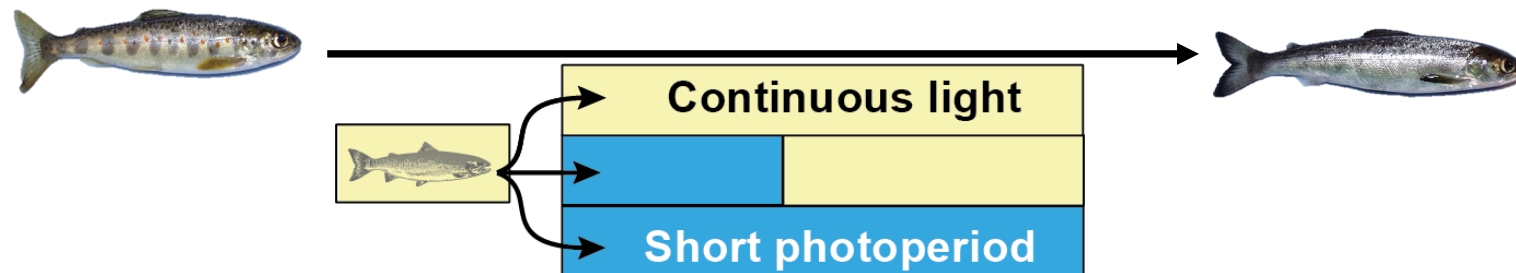
optimal genetikk



# Vinter som 'signal' for smoltifisering

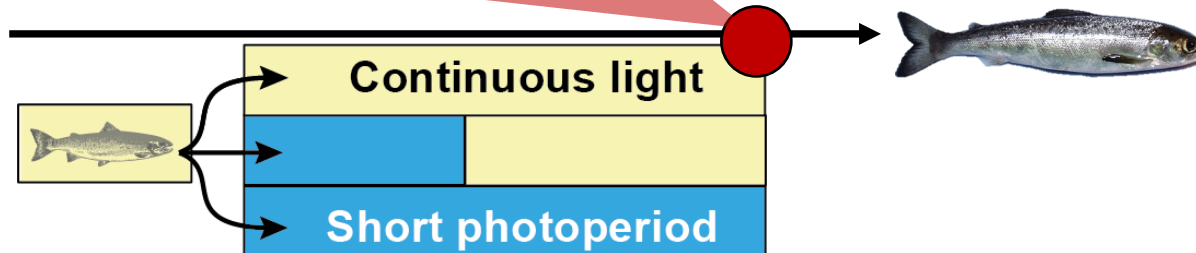
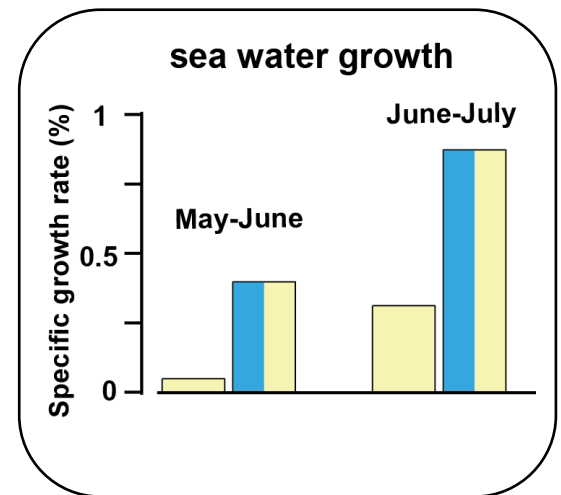
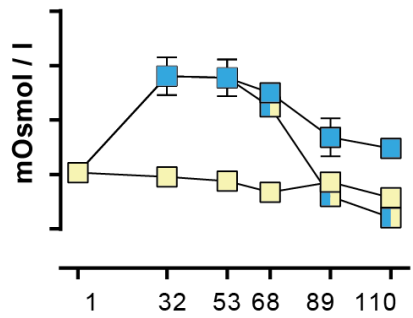
**vinter i 6 uker**

**vinter = 8 timer 'dagslys'**



# Vinter som 'signal' – preliminære resultater

Kloridnivå i blod etter 24 timer i saltvann

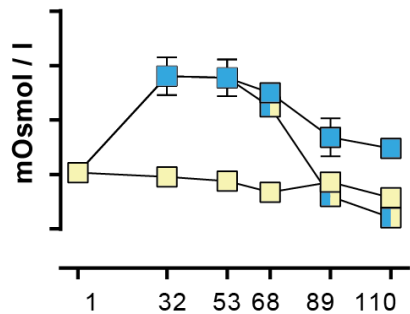


sjømerder

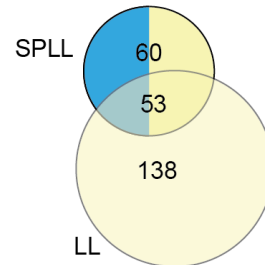


# Vinter som 'signal' – preliminære resultater

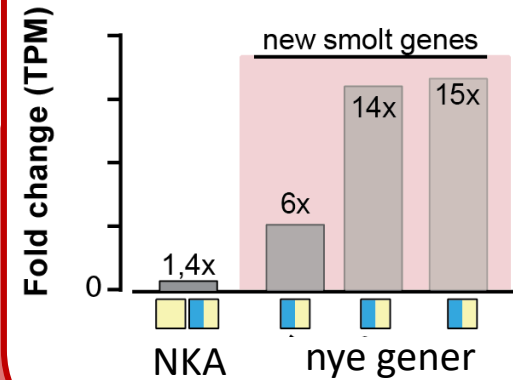
Kloridnivå i blod etter 24 timer i saltvann



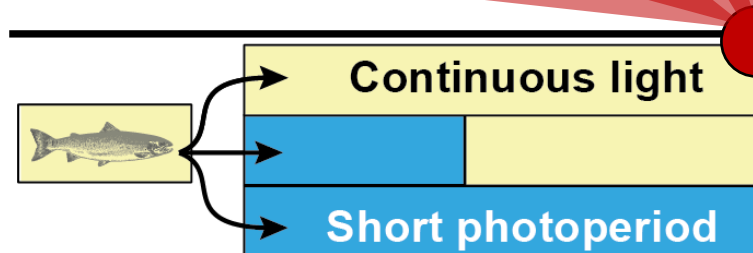
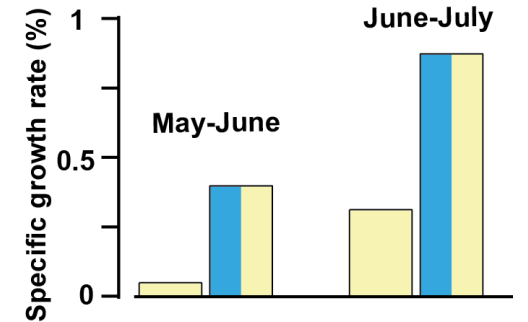
Gener som responderer på saltvannseksponering



Økning i genuttrykk mellom dag 1 og 110



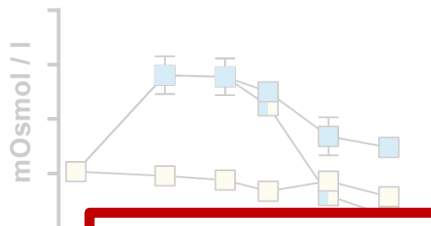
sea water growth



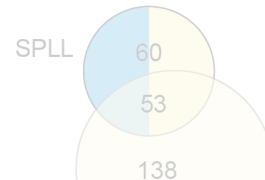
sjømerder

# Vinter som 'signal' – preliminære resultater

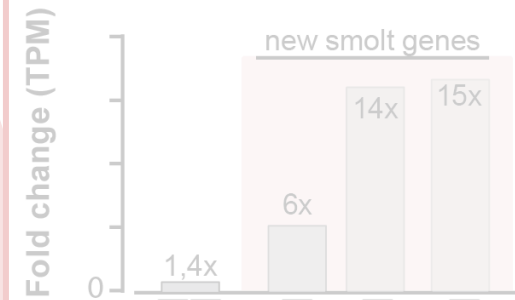
Kloridnivå i blod etter 24 timer i saltvann



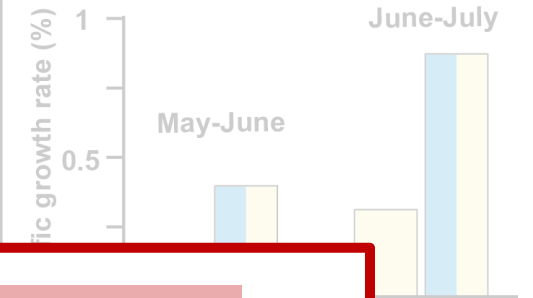
Gener som responderer på saltvannseksponering



Økning i genuttrykk mellom dag 1 og 110



sea water growth

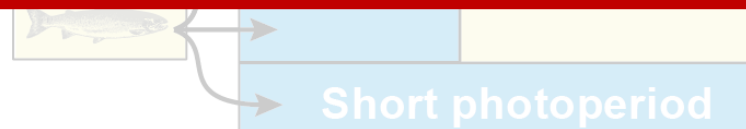


Gill  $\text{Na}^+, \text{K}^+$ -ATPase of Atlantic salmon smolts in freshwater is not a predictor of long-term growth in seawater

Gayle B. Zydlewski <sup>a,\*</sup>, Joseph Zydlewski <sup>b</sup>

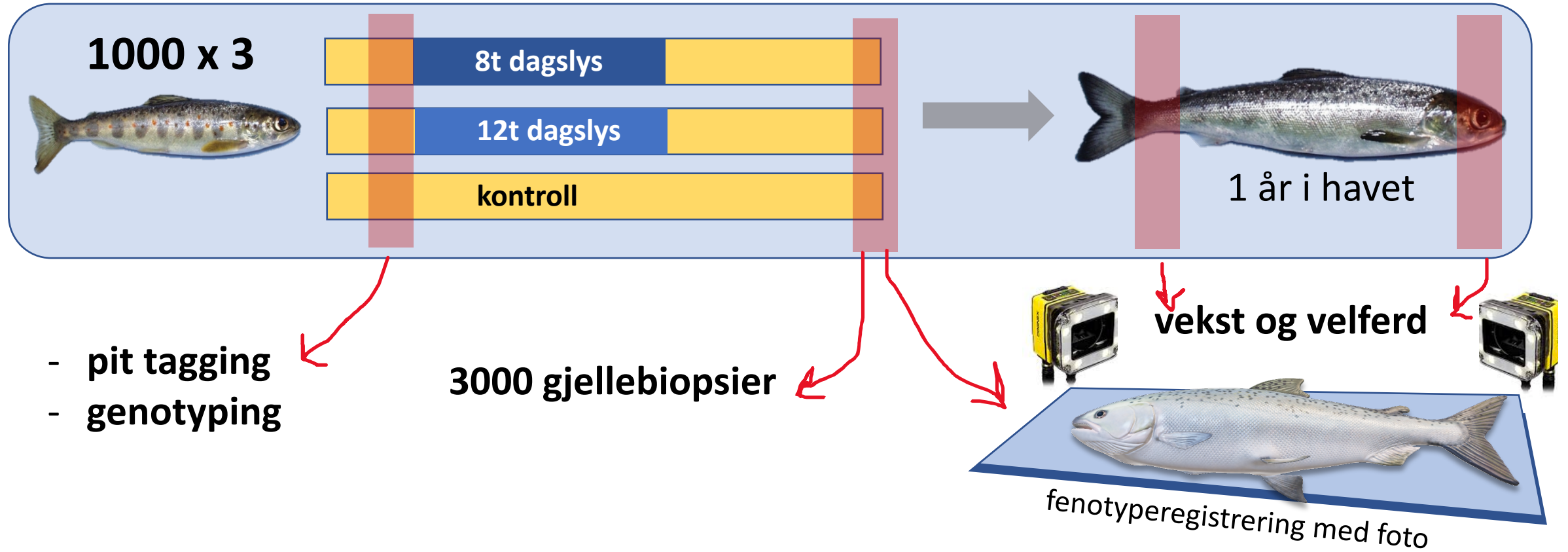
<sup>a</sup> School of Marine Sciences, University of Maine, Orono, ME, United States

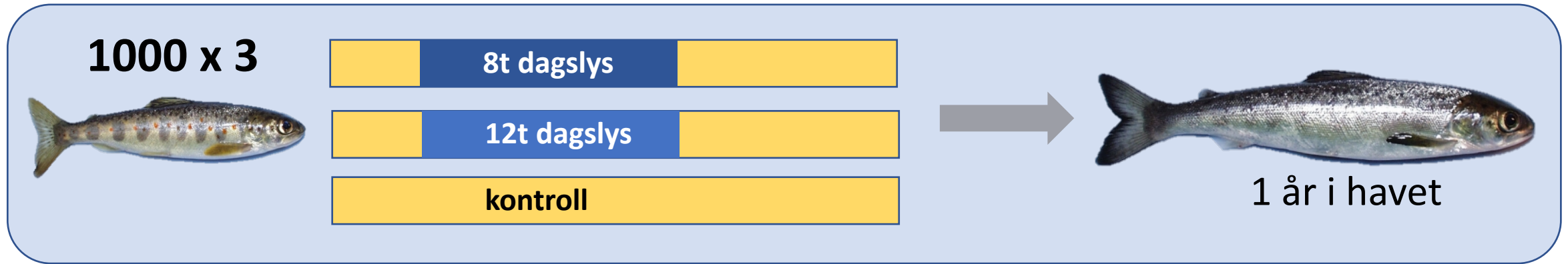
<sup>b</sup> U.S. Geological Survey, Maine Cooperative Fish and Wildlife Research Unit, University of Maine, Orono, ME, United States



Prosjektet  
på 3 lysbilder

# Følge 3000 individ fra smolt til slakt





**3000**  
**genomsekvenser**

**3000**  
**genuttrykksprofiler**

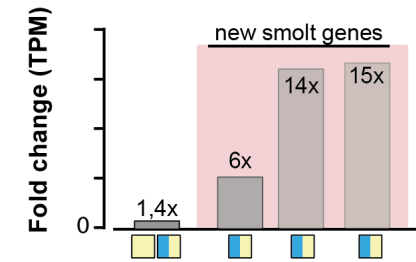
**3000**  
**livsløpsfenotyping**

# Oppsummering:

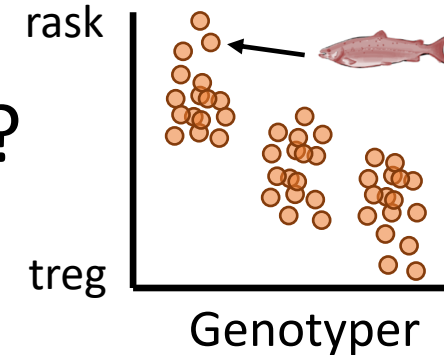


- **sterkt vintersignal** → synkron- og bedre smoltifisering?

- **nye molekulære markører** for 'robust smolt'



- **genetisk basis** for variasjon i smoltutvikling?



- **metoder** for bildebasert registrering vekst/velferd