Pink salmon in Tana - eDNA analyses

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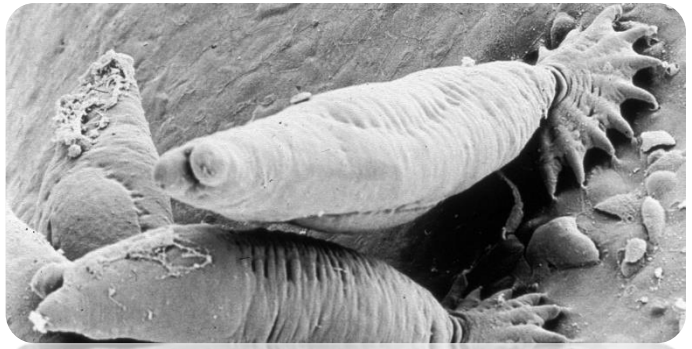
NINA and eDNA

River pearl mussel

Gyrodactylus salaris



Northern pike

Bees and pollination

Reindeer and CWD

Great-crested newts

Insects

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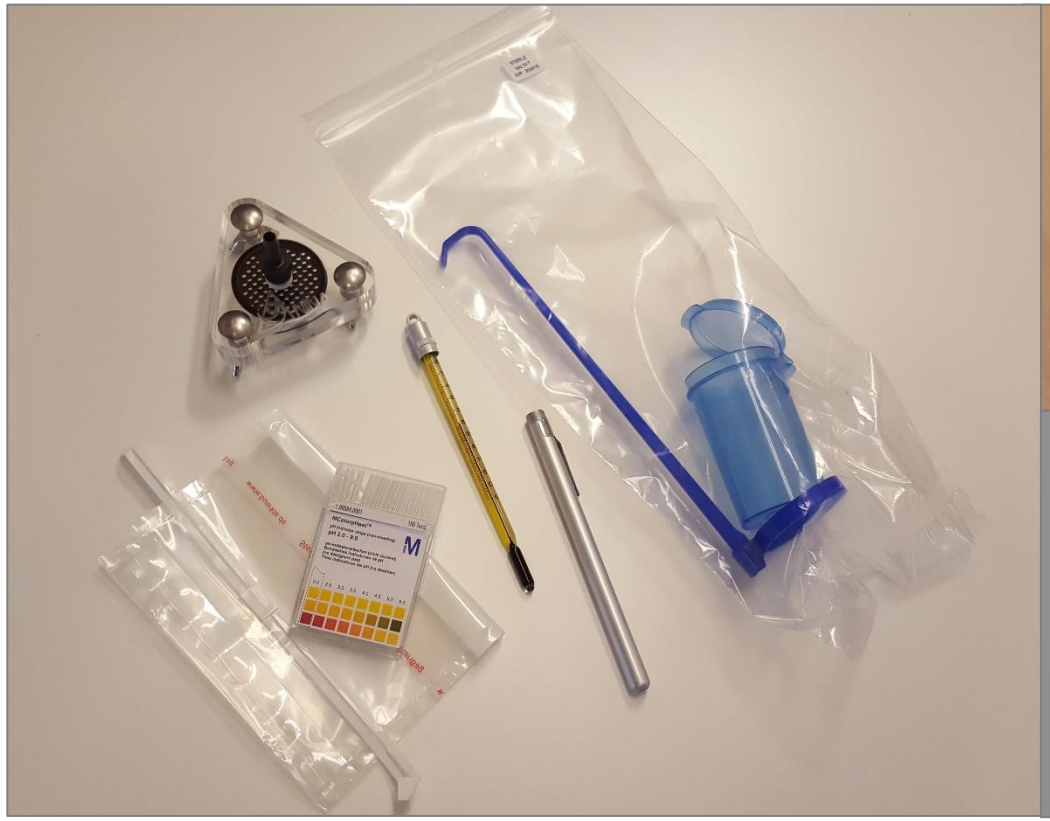
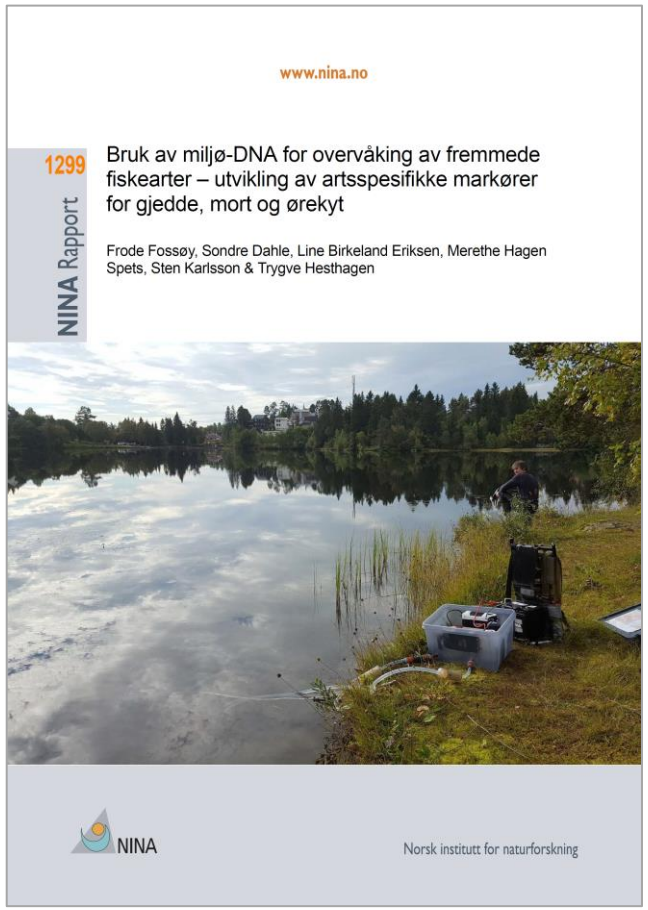
NINA eDNA kit



eDNA and invasive freshwater fish



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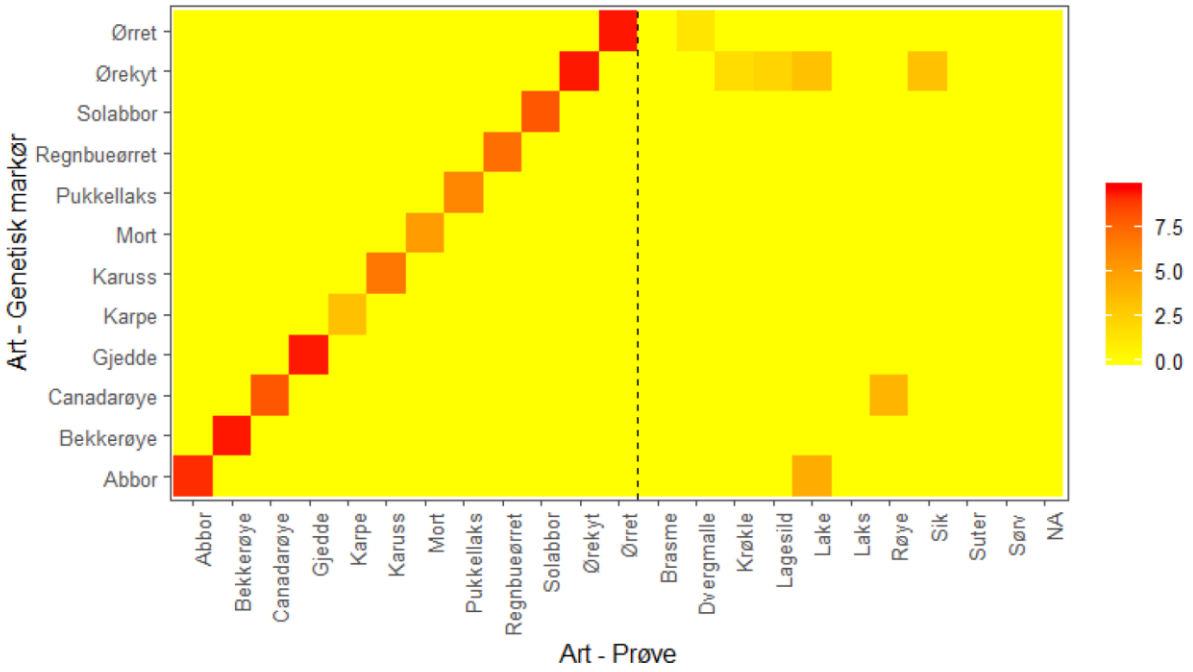
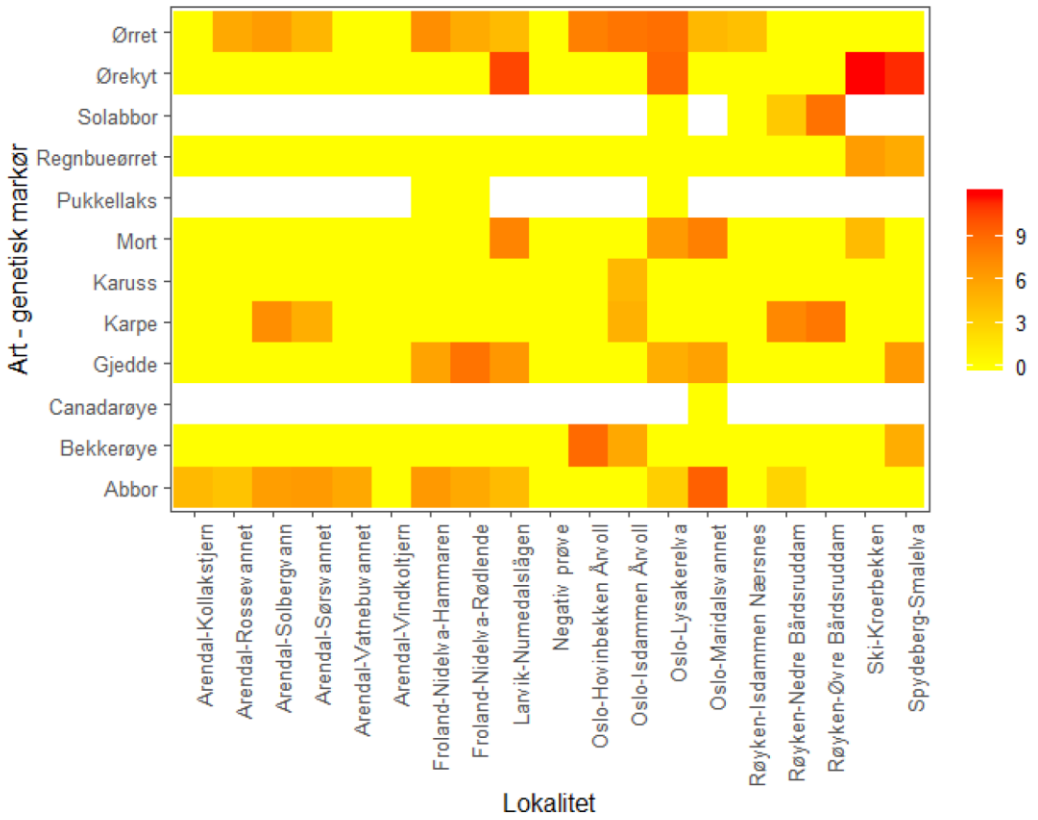
eDNA and invasive freshwater fish





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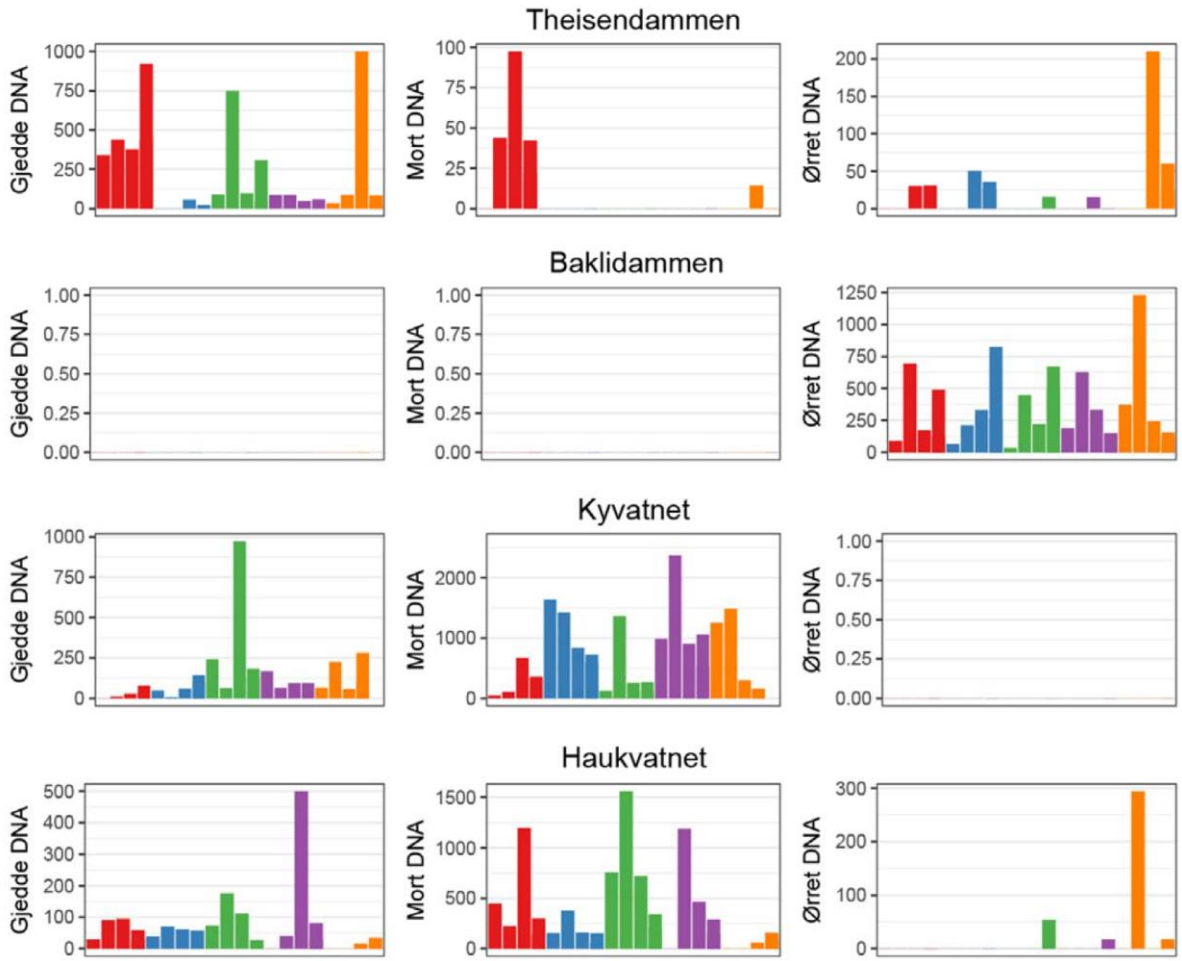
eDNA and invasive freshwater fish



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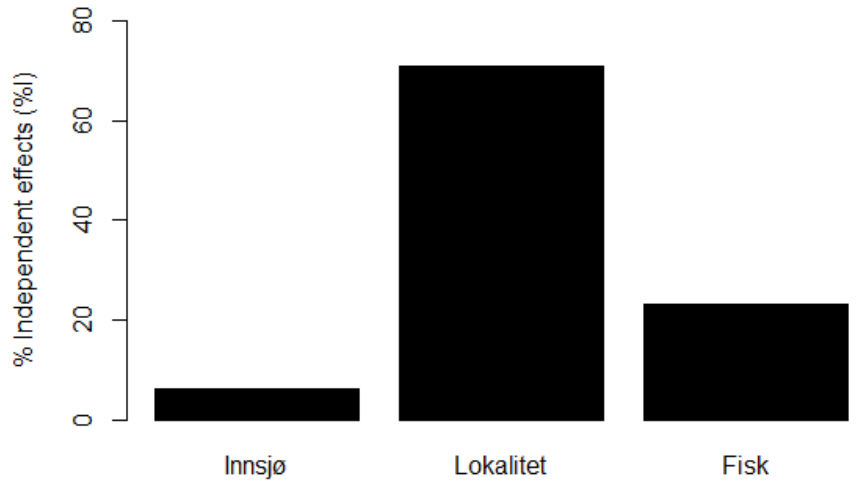
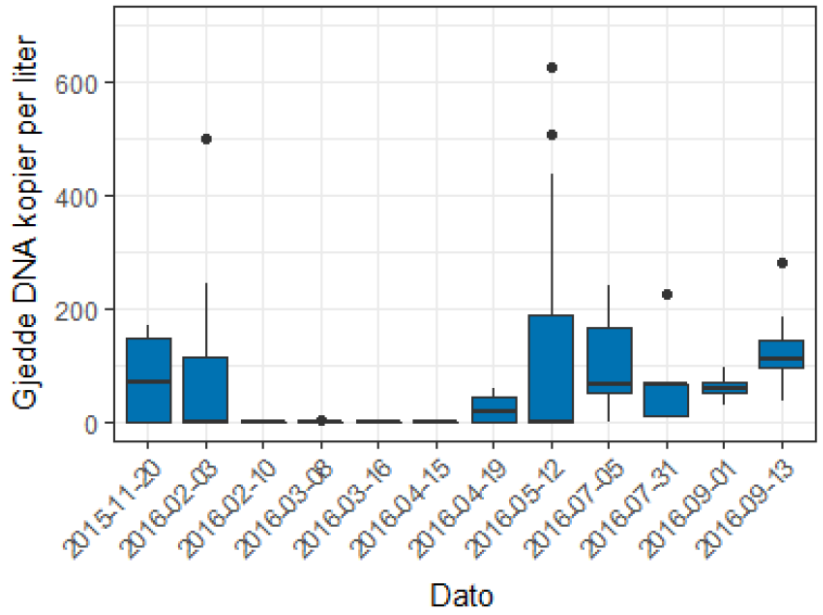
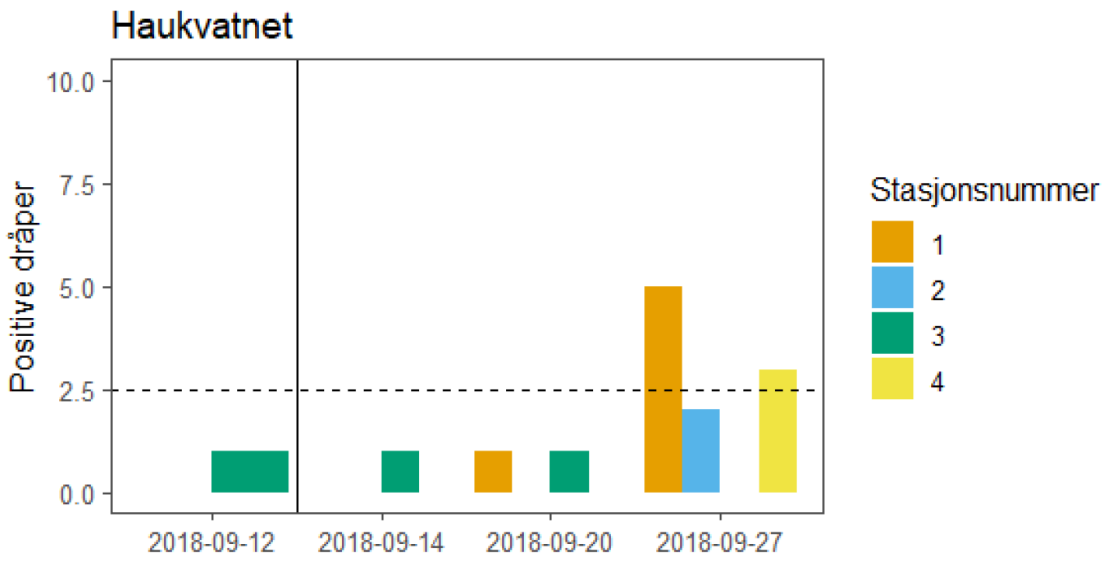
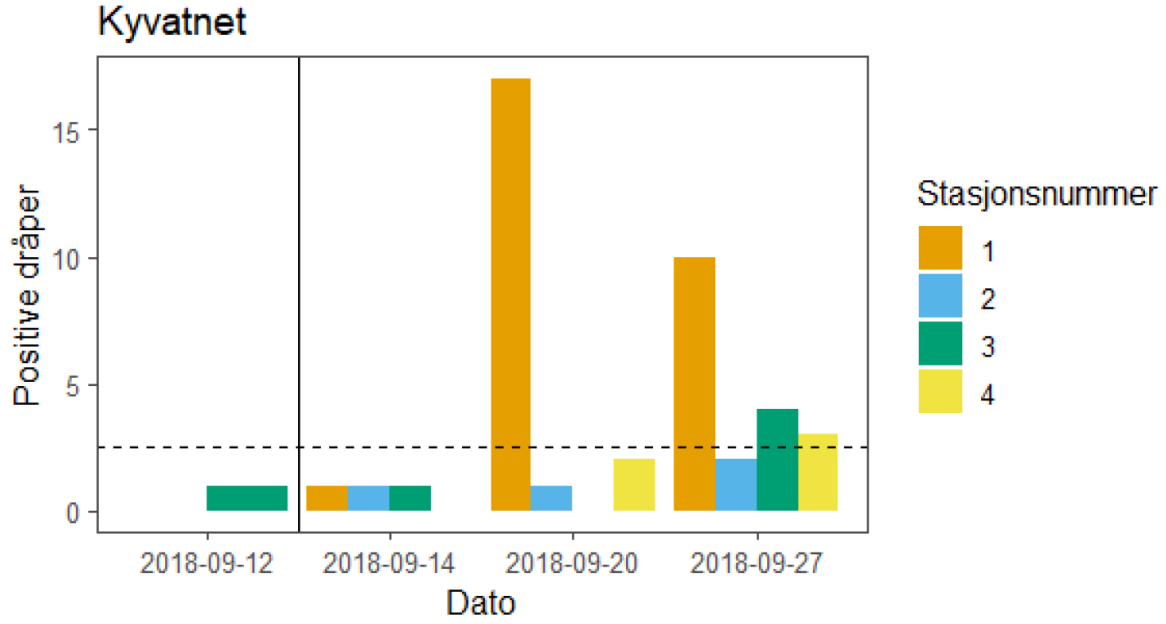




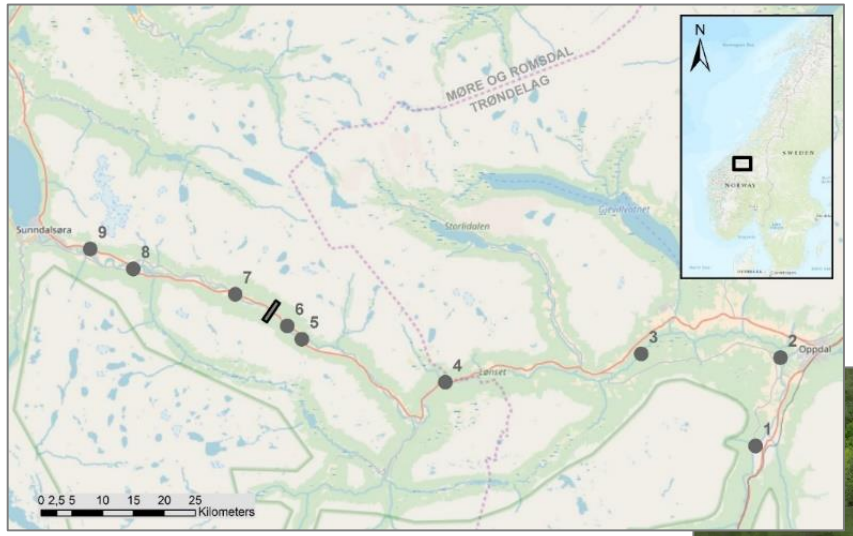
eDNA and invasive freshwater fish

- Limit of detection
  - 20 trout of 20 gram in each lake

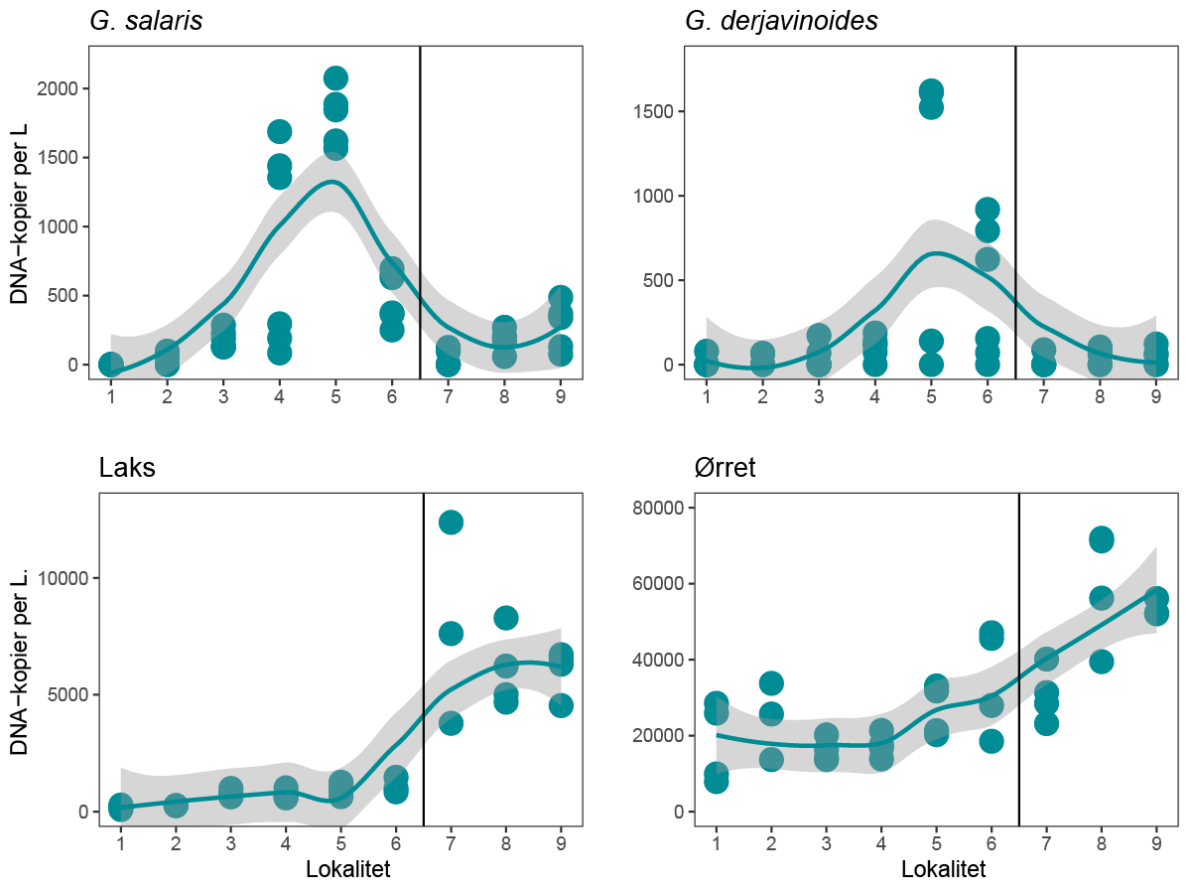




Gyrodactylus salaris in Driva



Gyrodactylus salaris in Driva



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ORIGINAL ARTICLE

Environmental DNA
WILEY

Monitoring presence and abundance of two gyrodactylid ectoparasites and their salmonid hosts using environmental DNA

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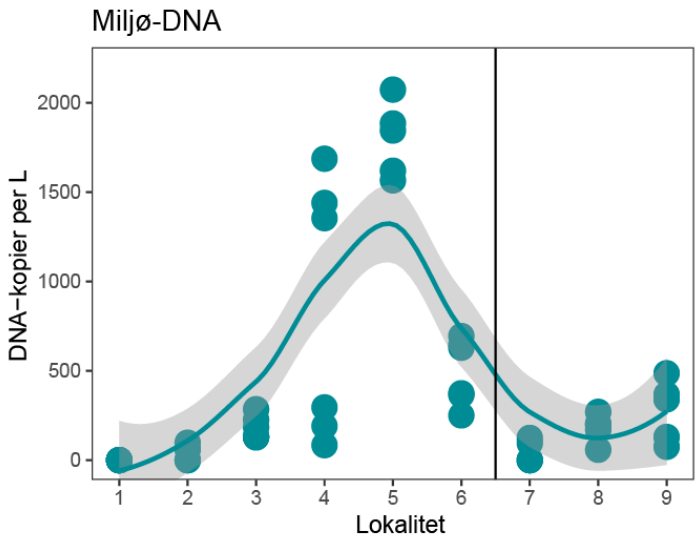
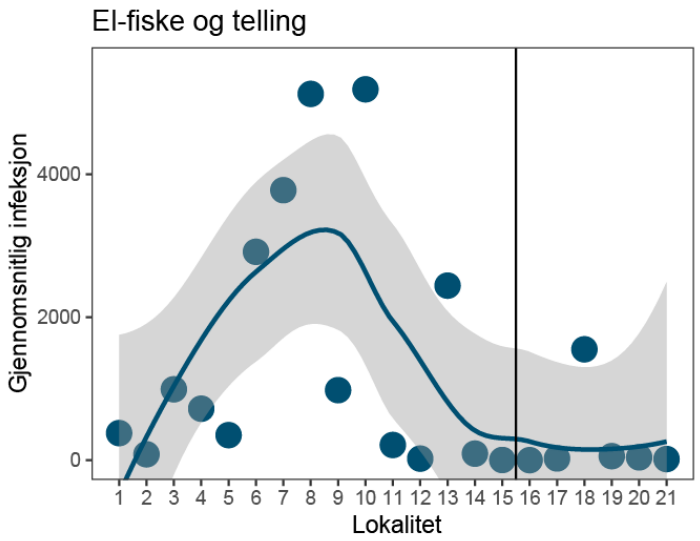
Gyrodactylus salaris in Driva





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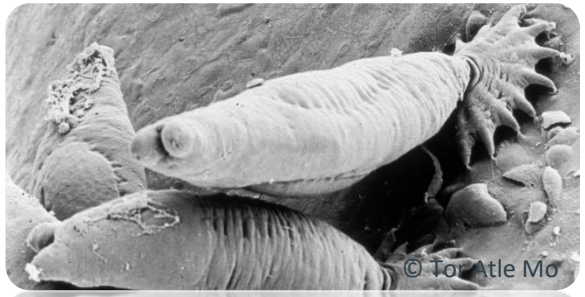
Gyrodactylus salaris in Driva

- eDNA occupancy modelling

Filtertype	*G. salaris*			*G. derjavinoides*		
	psi	theta	P	psi	theta	p
0.45 µm	0.84 (0.55-0.98)	0.93 (0.71-0.99)	0.78 (0.64-0.88)	0.82 (0.51-0.99)	0.83 (0.52-0.99)	0.48 (0.31-0.68)
2.0 µm	0.84 (0.56-0.98)	1.0 (1.0-1.0)	0.95 (0.85.0.99)	0.85 (0.56-0.99)	0.90 (0.70-0.98)	0.94 (0.82-0.99)

1 L vann

10 L vann



Fossøy et al. 2019, Environmental DNA

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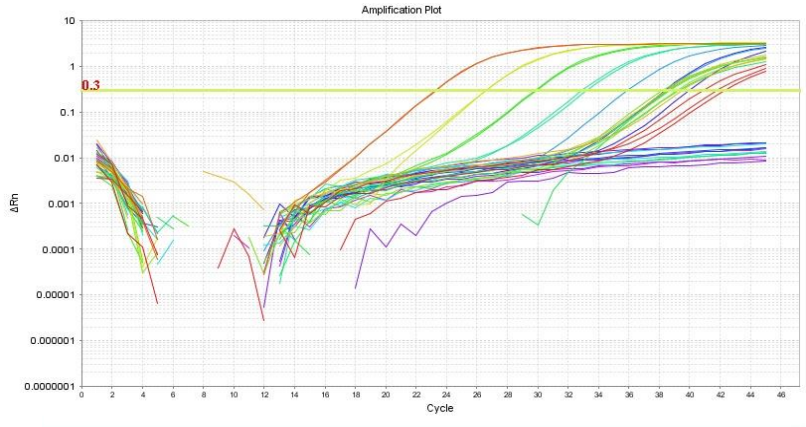
Miljø-DNA og fremmede fiskearter

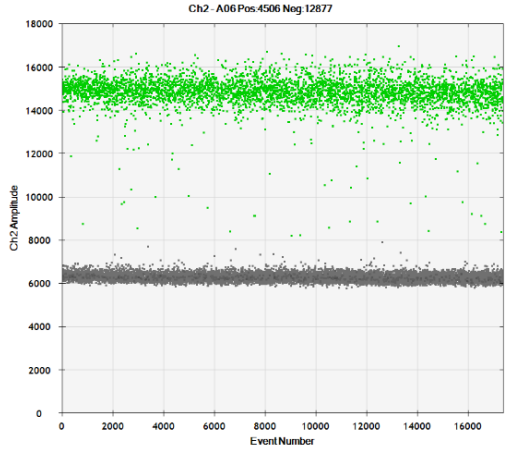
www.1000rivers.net – Citizen science

Species-specific analyses

qPCR



ddPCR



ddPCR quantification of eDNA

Prøve 1

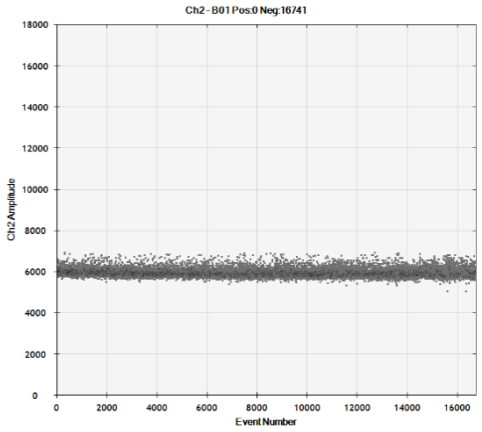
NEGATIV

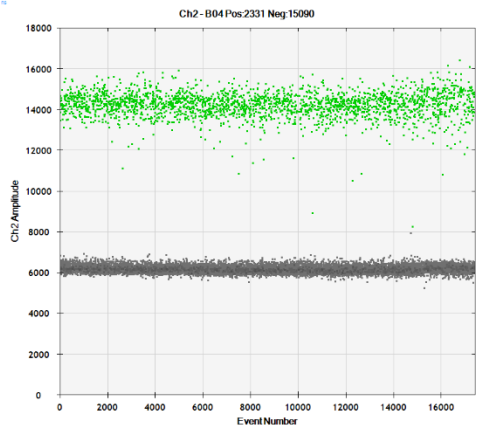
Prøve 2

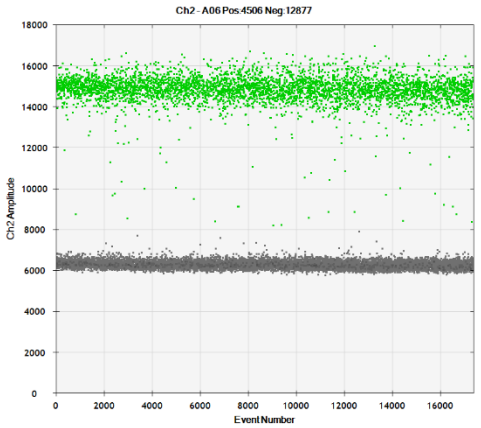
169 DNA kopier/µl

Prøve 3

353 DNA kopier/µl





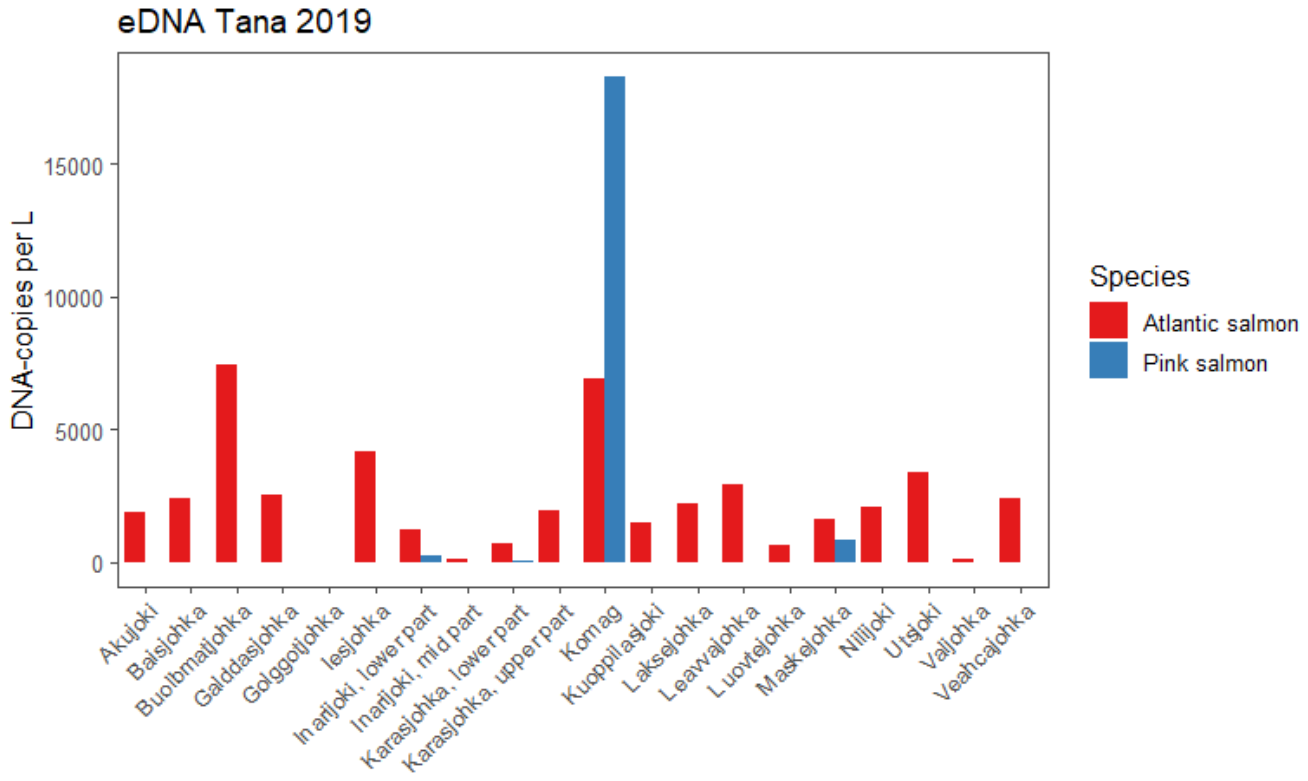


Why ddPCR over qPCR?

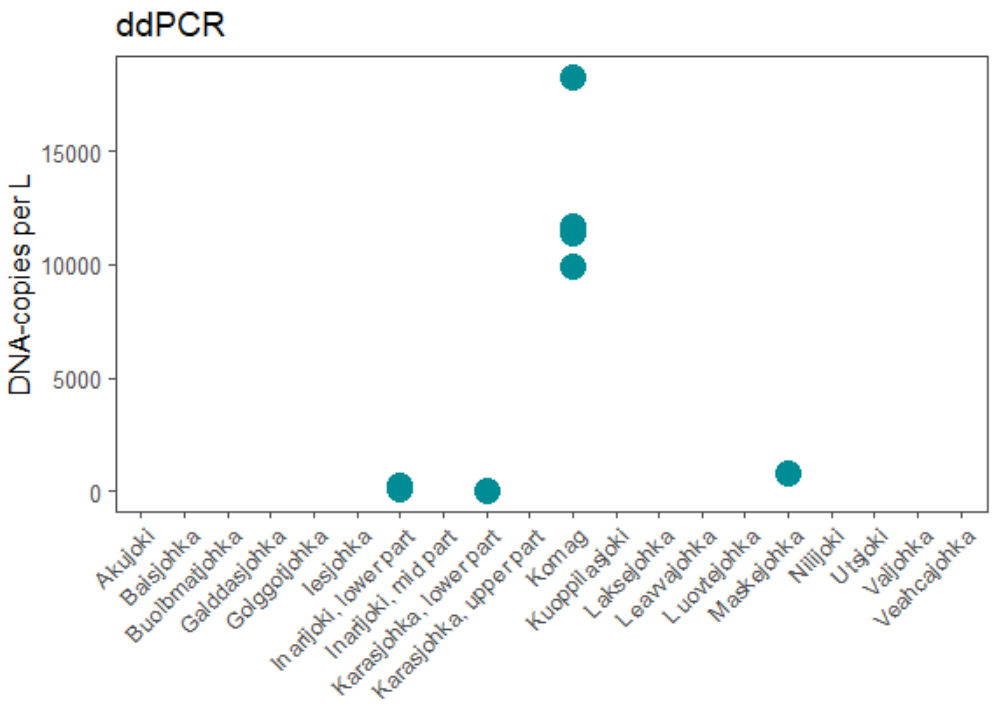
1. Endpoint PCR (0 or 1)
2. No standard curve needed
3. No replicates needed
4. Less sensitive to PCR-efficiency
5. Accumulative

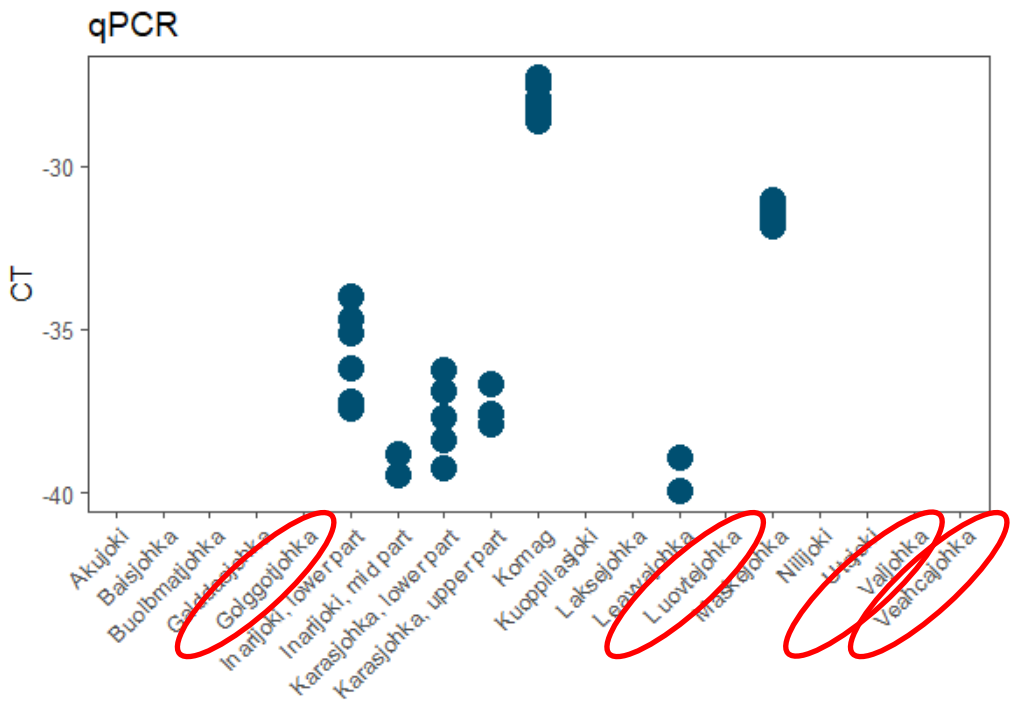
Pink salmon in Tana

- ddPCR



Pink salmon in Tana





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Cooperation and expertise for a sustainable future

Foto. A. Staverløkk