

FISH MIGRATION BARRIERS IN THE RIVER TANA TRIBUTARIES Summary of field work in Norwegian tributaries (2015-2016)



Interreg- project "Joint environmental management of the river Tana" (WP2)

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1. Background

Norwegian and Finnish authorities have cooperated since the late 1990's on inventories and restorations of fish migration barriers in the border river of Tana/Teno. When the main roads along the river valley were constructed, many small streams and rivers running under roads were let into road culverts.

The first common report on migration barriers inventories was published in 2001 and was a result of a joint Finnish- Norwegian Interreg-project¹. The first project was followed up and the second report released in 2004, also funded through EU's Interreg programme². Through these projects, the main crossings along state and regional roads along the Norwegian part of the Tana valley were checked for barriers and classified. Based on these reports, authorities in both countries have restored culverts and other fish migration barriers.

Although many objects along state and regional roads have been invented and restored, inventories of municipal and private roads at the Norwegian side have been lacking. Over the years 2015-2016, Tana and Karasjok municipalities cooperated with the local fishing authority (Tana vassdragets fiskeforvaltning) through the Tana river basin sub-district to conduct such inventories. The field work in the lower parts of Tana municipality in 2015 were based on the municipal plan for road maintenance and spots where the municipal roads crossed a stream or river. The results of the fieldwork in 2015-16 are summed up in this report and now made available for a larger audience.

This summary has been financed through the Interreg-project "Joint environmental management of the river Tana" (2017-2020) (Tana Interreg I). The summary is a basis for further field work and restorations conducted on Norwegian side of the river in the latter project over the years 2018-2019.

2. Descriptions of migration barriers and potential restoration objects

Over the years 2015-2016, 52 road crossings (culverts and bridges) on municipal and private roads in Tana and Karasjok municipalities were surveyed. A summary of the findings of the survey is given in chapter 3. Out of the 52 surveyed objects, two (2) were classified with high restoration potential and three (3) with low restoration potential. The objects with high restoration potential are presented below.

For information on chemical and ecological status of each water body (river stretch), please see the database <u>vann-nett</u>³.

¹ NVE, 2001. Vandringshindre for fisk i Tanaelvas sidelever- og bekker, konsekvenser av veibygging. Delrapport II fra prosjektet «Bevaringa v Tanaelva som lakseelv i naturtilstand».

² NVE, 2004. Vandringshindre for fisk i Tanaelva sideelver og -bekker, konsekvenser av veibygging. Rapport fra prosjektet "Bevaring av Tanaelva som lakseelv i naturtilstand II».

³ Please note that most of the written information is in Norwegian language only (some in English).

2.1. Čáhppesjohka (Ánarjohka, Karasjok municipality)

The bridge below Čáhppesjohka is a migraion barrier for the smallest fish. Electro fishing below the bridge detected 5 salmonids (92-123 mm) and two trouts (80-87 mm). Adding of stones under the bridge would make the bridge easier to cross for younger fisk. Measures are considered not to be very costly.



Photoes: Narve S. Johansen.

2.2. Ráitejohka (Ánarjohka, Karasjok municipality)

The lowest culvert (A28) is a migration barrier for smaller fish. The stream has good potential for fish. It is considered a cheap and cost-effective measure to make a threshold below the culvert that increases the water level and thus passage.



Photoes: Narve S. Johansen, Tanavassdragets fiskeforvaltning.

3. Summary of findings from inventories of road crossings (2015-2016), Tana municipality

Name of river			Culvert type	Comment	Year of
			and number		inventory
A1	Čahppesjohka ^₄	***	B1	Steep for smaller	2016 (2001)
				fish upstreams	
A2		-	P1	Steep, barrier downstreams	2016
A3	Solccar lilleelv	+	P2		2016
A4		+	P1		2016
A5		-	P1		2016
A6	Vuolit Ruovttujohka	+	Bridge		2016 (2001)
A7	Bajit Ruovttujohka	+	Bridge		2016 (2001)
A8		+	P1		2016
A9	Vealeája	-			2016
A10		-			2016
A11	lškorasjohka	+	Bridge		2016 (2001)
A12	Mohkkeras	+	P1		2016
A13		+	P2		2016
A14	Máreveadji	+	Bridge		2016 (2001)
A15		-	S1	Barrier below culvert	2016
A16		+	Trees		2016
A17		+	P1		2016 (2001)
A18	Njáhasjohka	+	S1		2016 (2001)
A19	Goššjohka	+	Bridge		2016 (2001)
A20	Gállája	+	Timber culvert	Small culvert	2016 (2001)
A21	Dierpmasája	-	S1		2016
A22	Ruvvvašjohka	*	S1	High water velocity	2016
A23		+	S1		2016
A24		+	Bridge		2016
A25		**	B1		2016
A26	Assuorgi	+	Bridge		2016
A27		-	P1		2016
A28	Ráitejohka	***	B2	High water velocity	2016
A29		+			2016
A30		-			2016
A31		+			2016
A32		+			2016
A33		-			2016
A34		+			2016
A35	Geassesaiája	+	S1		2016
A36	Guorrasjohka	+	Bridge		2016
A37	Allavuohčojohka	+	S1		2016
A38	Caskibjohka	+	Bridge		2016
К1	Sammaljohka	-	B1		2016 (200

⁴ Electro-fishing data exists for this site. Fish presence documented.

Name of river			Culvert type	Comment	Year of
			and number		inventory
K2	Nilitomohkkejohka	-	S2		2016 (2004)
К3	Ápmemohkkejohka	+	S1		2016
К4	Ápmemohkkijogaš	-	B1		2016
К5	Goržejohka	+	Bridge		2016 (2004)
K6	Heargejogaš	-	B1		2016
K7	Námmajohka	+	Bridge		2016 (2004)
K8	Gákkohkjogaš	-	S2		2016
К9	Gumpejohka	-	S1		2016
K10	Roavvejogaš	-	S1		2016
K11	Čohkejogaš	-			2016
K12	Gorvvajohka	+	S1		2016
K13		+	S1		2016
T1	Golggotjohka/Gulbjok	**			2015
T2		+		Not barrier	2015
Т3		+		Not barrier	2015
Т4	Mohkkeveaijohka	+			2015 (2004)
Т5	Rássejohka/Rasjok	+		River affected by	2015
				waste water	
				discharge	
T6		+		Not barrier	2015
T7		+		Not barrier	2015
T8		+		Not barrier	2015
Т9		+		Not barrier	2015
T10		+		Not barrier	2015
T11		-			2015
T12		-			2015
T13	Fielbmajohka	-	B2		2015
T14	-	-	B2		2015
T15	Árbanatjohka	+		Not barrier	2015

*** Restoration object of large potential

**Restoration object of low potential

*Restoration object of uncertain potential

+ Object of no restoration potential

 No restoration potential due to natural barriers, low water flow, steep river stretch and/or poor fish habitat upstreams S= Steel culvert

B= Concrete culvert

SB= Steel culvert covered in concrete

P= Plast culvert

Bibliography

NVE, 2001. Vandringshindre for fisk i Tanaelvas sidelever- og bekker, konsekvenser av veibygging. Delrapport II fra prosjektet «Bevaring av Tanaelva som lakseelv i naturtilstand».

NVE, 2004. Vandringshindre for fisk i Tanaelva sideelver og -bekker, konsekvenser av veibygging.

Maps on locations of invented road crossings (2015-2016)



Map 1) Ánarjohka: Dorvonjárga- Helligskogen (A1-A5)

Map 2) Ánarjohka: Dorvonjárga- Helligskogen (A6-A9)



Map 3) Ánarjohka: Dorvonjárga- Helligskogen (A10-A16)



Map 4) Ánarjohka: Dorvonjárga- Helligskogen (A17-A22)



Map 5) Ánarjohka: Dorvonjárga- Helligskogen (A23-A29)









Map 7) Ánarjohka: Dorvonjárga- Helligskogen (A37-A38)

Map 8) Kárášjohka (K1-K2)



K1 Sámmáljohka. Photoes: Narve S. Johansen.

Map 9) Kárášjohka (K3-K12)





Map 10) Location of the river Golggotjohka/Gulbjok in the lower part of river Tana (T1-T3)



Map 12) Location of the Rássejohka/Rasjok river in the lower parts of river Tana (objects T5-T12)



Map 13) Locations of crossings T5-T12 in Rasjok