

Recreational fishing in an educational
intervention context promotes awareness and
knowledge about nature in schoolchildren

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“Intuitive” hypothesis

**– Outdoor recreation promotes
environmental awareness!**

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Very little scientific evidence



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Attitudes towards nature may be affected
by outdoor experiences **in young!**

(e.g. Bögeholtz, 2008; Ewert et al 2011; Villacorta *et. al.* 2003)

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The klassdraget intervention

Sportfiskarna (since 2006) and Jägareförbundet (since 2009)

Approximately 45 000 children has participated since the start 2006

Finacially supported by The Swedish environmental protection agency (Naturvårdsverket)

Project aims (selected)

- **Promote angling, wildlife, nature and outdoor recreation in school.**
- **Inspire schools to use nature and outdoor recreation more frequently in education**

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Procedure for klassdraget

Teachers apply for participation

If accepted, a local angling club takes the class fishing for one day

Pedagogical work package and fishing equipment provided by Sportfiskarna

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Unique opportunity

- Children from all over the country
- Children did not choose to participate (teachers decision)
- Children experienced similar activities (angling in an educational context)

An "undiliberate" quasi experimental setup by Sportfiskarna and Jägareförbundet

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Why study fishing?

- Appr. 1.8 million Swedes fish at least once a year (Eriksson 2008)
- Appr. 10% of populations worldwide (Granek *et al* 2008)

- It is great fun



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Two main areas of research

- **Outdoor recreation habits**
 - Nature visits
 - Frequency of nature visits
 - Nature visit companions
 - Fishing
 - Frequency of recreational fishing
 - Fishing companions
- **Environmental awareness**
 - Knowledge about nature
 - Interest for nature

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Questionnaires were constructed in cooperation with Sportfiskarna and Svenska Jägare förbundet

Klassdraget
Questionnaire 1*
n=17 classes

Controll
Classes from the
same schools
Questionnaire 2*
n=10 classes

* Questionnaires were almost identical but Q1 included questions regarding klassdraget activities

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Intervention group (*n=17 classes*)

Control group (*n=10 classes*)

		n	%	age
<i>Intervention</i>	boys	162	58,7	8-12
	girls	114	41,3	8-12
Total		276	100,0	
<i>Control</i>	boys	63	47,4	8-12
	girls	70	52,6	8-12
Total		133	100,0	

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Outdoor recreation habits



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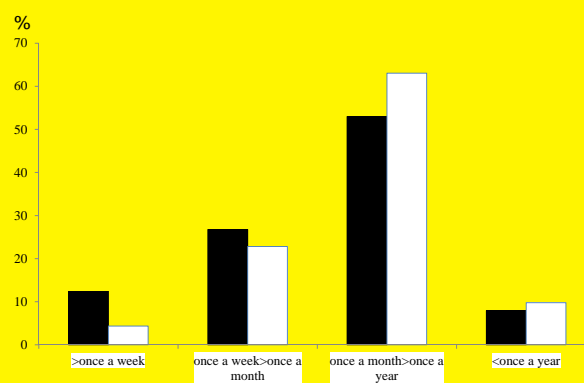
Fishing on spare time?

<i>Klassdraget</i>	73%
<i>control</i>	69%
<i>p=</i>	<i>ns</i>
<i>Klassdraget:</i>	
<i>Boys</i>	78%
<i>Girls</i>	67%
<i>p=</i>	<i><0.001</i>
<i>Controll group:</i>	
<i>Boys</i>	82%,
<i>Girls</i>	59%
<i>p=</i>	<i>0.009</i>

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Fishing frequency



Intervention group (filled bars) (n=202) and the control group (open bars) (n=92) (p= 0.035). Non fishers excluded

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Frequency of fishing

Boys fish more often in both groups

69 % of total would like to fish more often (no difference between boys and girls)

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Angling companions

Intervention v s control (pooled sexes)

	Family	friend	org	alone
<i>Intervention</i>	88.7%	30.4%	2.9%	11.3%
<i>Control</i>	90.2%	16.3%	1.1%	1.1%
<i>p=</i>	<i>ns</i>	0,011	<i>ns</i>	0,003

Intervention v s control (by sex)

Boys

<i>Intervention</i>	84.3%	37.8%	4.7%	17.3%
<i>Control</i>	84.3%	19.6%	2.0%	2.0%
<i>p=</i>	<i>ns</i>	0,019	<i>ns</i>	0,006

Girls

<i>Intervention</i>	96.1%	18.2%	0%	0%
<i>Control</i>	97.6%	12.2%	0%	1.3%
<i>p=</i>	<i>ns</i>	<i>ns</i>	-	<i>ns</i>

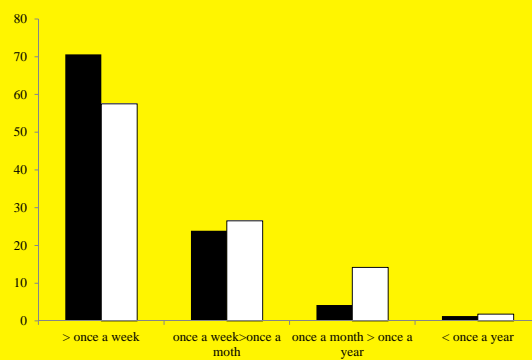
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Angling companions

	Family	friend	org	alone
<i>Whithin groups (by sex)</i>				
<i>control group</i>				
Boys	84.3%	19.6%	2.0%	2.0%
Girls	97.6%	12.2%	0%	0%
p=	0.033	ns	ns	ns
<i>intervention group</i>				
Boys	84.3%	37.8%	4.7%	17.3%
Girls	96.1%	18.2%	0%	1.3%
p=	ns	ns	ns	0.004

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**Nature visit frequency**

Frequency of nature visits between the klassdraget group (filled bars) (n=276) and the control group (open bars) (n=133) (p= 0.005).

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Nature visit companions*Intervention v.s control (pooled sexes)*

	Family	friend	org	alone
<i>Intervention</i>	51.8%	58.7%	5.8%	24.8%
<i>Control</i>	54.1%	54.9%	5.3%	14.9%
p=	ns	ns	ns	0,035

Intervention v.s control (by sex)

Boys

<i>Intervention</i>	48.8%	57.4%	4.9%	27.2%
<i>Control</i>	44.4%	52.4%	4.8%	17.5%
p=	ns	ns	ns	ns

Girls

<i>Intervention</i>	56.1%	60.5%	7%	14%
<i>Control</i>	62.9%	57.1%	5.7%	8.6%
p=	ns	ns	ns	ns

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**Environmental awareness**

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Interest for nature may be used as a predictor for nature protective behaviour!

Kals *et al* (1999)

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	Girls	boys	p
Learned new things about nature?	57%	36%,	<0.001

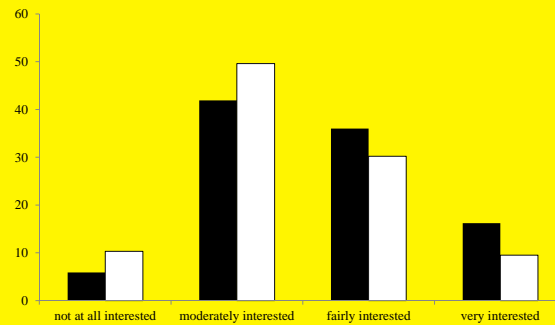
Knowledge test

Four assertions regarding environmental problems which were either true or false revealed no differences.

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Self estimated interest for nature



Data are presented as percent of total in each group (klassdraget (filled) and control (open)). $p=0.012$

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Duration of interest for nature

Positive (but weak) correlation between number of month since participation in klassdraget and self estimated interest in nature (Spearman correlation=0.135, $p=0.037$).

6 to 35 month (approximately 3 years)

If anything, Interest for nature increase with time!

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Klasdraget or simply a result of age?

Negative correlation between age (pooled data) and self estimated interest in nature (Spearman correlation=-0.1, $p=0.042$).

Taken together, these results suggests that the positive effect of participation may be stronger than the negative effect imposed by age.

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Summary

Positive effects of Klasdraget on

- Fishing frequency
- Nature visit frequency
- Interest in nature
 - Positive correlation between time since participation an self estimated interest in nature (duration > 35 months)
 - Negative correlation between age and self estimated interest in nature in the pooled data.
- Proportion of "lone anglers"
- Self estimated knowledge about nature
 - Stronger effects in girls

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Discussion

- A result of the intervention?
 - Teachers (and other adults) role?
- Effects stronger in girls
 - Fishing is "male biased", what happens if boys and girls practice traditional girl activities?
- Longitudinal studies?
 - choice of future education?

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