

Database Code: AS006

Title: Aquatic Vertebrate Population Study in Mack Creek, Andrews Experimental Forest, 1987 to present

**Abstract:**

Populations of Coastal Cutthroat trout (*Onchorhynchus clarkii clarkii*) in two standard reaches of Mack Creek in the H.J. Andrews Experimental Forest have been monitored since 1987. Monitoring of Coastal Giant Salamanders, *Dicamptodon tenebrosus* began in 1993. The two standard reaches are in a section of clearcut forest (ca. 1963) and an upstream 500 year old coniferous forest. Sub-reaches are sampled with 2-pass electrofishing, and all captured vertebrates are measured and weighed. Additionally, a set of channel measurements are taken with each sampling. This study constitutes one of the longest continuous records of salmonid populations on record.

**Keywords:** Amphibians; Animal populations; Aquatic habitats; Biomass; Demography; Disturbance; Ecology; Fish; Fish habitat; Fish populations; Floods; Herpefauna; Population dynamics; Resistance and resilience; Stream ecology; Streams; Timber harvesting; Trout; Vertebrates; Populations; habitats; populations; demography; ecology; stream ecology; population dynamics; floods; biomass; resistance and resilience; disturbance; timber harvest; aquatic ecosystems; streams; animals; vertebrates; amphibians; fishes; trout; reptiles;

**Date data commenced:** 1987-10-06

**Date data terminated:** 2019-09-05

**Principal Investigator:** Ivan Arismendi

**List of Entities:**

1. Vertebrate numbers and size
2. Habitat dimensions

**1. Vertebrate numbers and size**

Annual survey of aquatic vertebrates, numbers, sizes

**Attribute List:**

DBC CODE	N	N	char(5)	enum			
ENTITY	N	N	numeric(1,0)	range	1.0000	1.0000	number
YEAR	Y	N	numeric(4,0)	range	1987.0000	2019.0000	number
SITE CODE	Y	N	char(8)	place			
SECTION	Y	N	char(2)	enum			
REACH	Y	N	char(1)	enum			
PASS	Y	N	numeric(1,0)	range	1.0000	2.0000	number
UNIT NUM	Y	N	numeric(4,1)	range	1.0000	20.0000	number
UNIT TYPE	Y	N	char(3)	enum			
VERT_INDEX	Y	N	numeric(5,0)	range	1.0000	28301.0000	number
PIT NUMBER	N	Y	numeric(10,0)	range	62048.0000	26207039.0000	number
SPECIES	N	Y	char(4)	taxa			
LENGTH1	N	Y	numeric(3,0)	range	19.0000	253.0000	mm
LENGTH2	N	Y	numeric(3,0)	range	28.0000	284.0000	mm
WEIGHT	N	Y	numeric(7,2)	range	0.0900	134.5900	g
CLIP	N	N	char(6)	enum			
SAMPLE DATE	N	N	datetime	range	10/6/1987	9/5/2019	YYYY-MM-DD

12:00:00 12:00:00  
AM AM

NOTES N Y varchar(150) freetext

**2. Habitat dimensions**

Measurements of channel units within vertebrate sampling area

**Attribute List:**

DBC CODE	N	N	char(5)	enum			
ENTITY	N	N	numeric(1,0)	range	2.0000	2.0000	number
YEAR	Y	Y	numeric(4,0)	range	1987.0000	2019.0000	number
SITE CODE	Y	Y	char(8)	place			
SECTION	Y	N	char(2)	enum			
REACH	Y	N	char(1)	enum			
UNIT NUM	Y	Y	numeric(4,1)	range	1.0000	20.0000	number
UNIT TYPE	Y	Y	char(3)	enum			
LENGTH	N	Y	numeric(4,1)	range	1.0000	57.1000	m
WIDTH1	N	Y	numeric(4,1)	range	0.3000	9.4000	m
WIDTH2	N	Y	numeric(4,1)	range	0.2000	10.9000	m
WIDTH3	N	Y	numeric(4,1)	range	0.1000	12.5000	m
WIDTH4	N	Y	numeric(4,1)	range	0.2000	11.3000	m
WIDTH5	N	Y	numeric(3,1)	range	0.2000	11.0000	m
DEPTH1	N	Y	numeric(4,2)	range	0.0100	0.7000	m
DEPTH2	N	Y	numeric(4,2)	range	0.0100	0.9200	m
DEPTH3	N	Y	numeric(4,2)	range	0.0100	0.6800	m
DEPTH4	N	Y	numeric(4,2)	range	0.0100	0.8600	m
DEPTH5	N	Y	numeric(4,2)	range	0.0100	0.7400	m
DEPTH6	N	Y	numeric(4,2)	range	0.0100	0.8800	m
DEPTH7	N	Y	numeric(4,2)	range	0.0100	0.7600	m
DEPTH8	N	Y	numeric(4,2)	range	0.0300	0.8800	m
DEPTH9	N	Y	numeric(4,2)	range	0.0100	1.0200	m
DEPTH10	N	Y	numeric(4,2)	range	0.0100	0.9600	m
DEPTH11	N	Y	numeric(4,2)	range	0.0100	0.7900	m
DEPTH12	N	Y	numeric(4,2)	range	0.0200	1.0200	m
DEPTH13	N	Y	numeric(4,2)	range	0.0100	0.5200	m
DEPTH14	N	Y	numeric(4,2)	range	0.0200	0.5300	m
DEPTH15	N	Y	numeric(4,2)	range	0.0100	0.5900	m
DEPTH16	N	Y	numeric(4,2)	range	0.0300	0.9500	m

DEPTH17	N	Y	numeric(4,2)	range	0.0100	0.6100	m
DEPTH18	N	Y	numeric(4,2)	range	0.0100	0.6000	m
DEPTH19	N	Y	numeric(4,2)	range	0.0100	0.9000	m
DEPTH20	N	Y	numeric(4,2)	range	0.0200	1.0000	m
MAXDEPTH	N	Y	numeric(4,2)	range	0.1000	1.1000	m
SAMPLEDATE	N	N	datetime	range	10/6/1987	9/5/2019 12:00:00 12:00:00	YYYY-MM-DD
NOTES	N	Y	varchar(150)	freetext	AM	AM	

Attributes Definitions:

CLIP

Fin clip type (Onchoryhncus recaptures only). Ended in 2006.

DBC CODE

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DEPTH1

Depth 1 along width1 transect

DEPTH10

Depth 2 along width3 transect

DEPTH11

Depth 3 along width3 transect

DEPTH12

Maximum depth along width3 transect

DEPTH13

Depth 1 along width4 transect

DEPTH14

Depth 2 along width4 transect

DEPTH15

Depth 3 along width4 transect

DEPTH16

Maximum depth along width4 transect

DEPTH17

Depth 1 along width5 transect

DEPTH18

Depth 2 along width5 transect

DEPTH19

Depth 3 along width5 transect

DEPTH2

Depth 2 along width1 transect

DEPTH20

Maximum depth along width5 transect

DEPTH3

Depth 3 along width1 transect

DEPTH4

Maximum depth along width1 transect

DEPTH5

Depth 1 along width2 transect

DEPTH6

Depth 2 along width2 transect

DEPTH7

Depth 3 along width2 transect

DEPTH8

Maximum depth along width2 transect

DEPTH9

Depth 1 along width3 transect

ENTITY

Entity number

LENGTH

Channel unit length

LENGTH1

Length type 1 (total or snout-fork length for Onchorhyncus, snout-vent for Dicamptodon). See supplemental information in metadata.

LENGTH2

Length type 2 (Dicamptodon only--snout-tail)

MAXDEPTH

Maximum depth channel unit

NOTES

Comments

PASS

Electoshocking pass number

PITNUMBER

Unique pit tag number; tag is embedded in vertibrate. Began in 2007.

REACH

Reach sampled (in 50 m distances)

SAMPLEDATE

Date sampled

SECTION

Location of sampling section

SITECODE

Coded name of sample area

SPECIES

Vertebrate species sampled

UNITNUM

Channel unit number (sequential)

UNITTYPE

Channel unit classification type

VERT\_INDEX

Unique numerical index of vertebrates measured (for creating key field)

WEIGHT

Weight of individual organism (not taken after 1999)

WIDTH1

Wetted width of channel unit -- transect 1

WIDTH2

Wetted width of channel unit -- transect 2

WIDTH3

Wetted width of channel unit -- transect 3

WIDTH4

Wetted width of channel unit - transect 4

WIDTH5

Wetted width of channel unit - transect 5

YEAR

Year of Survey

Enumerated Domains:

Enumerated Domain for Attribute: CLIP

LV Left ventral fin

LVRV Left and right ventral fins

RV Right ventral fin

NONE No ventral fin clip

Enumerated Domain for Attribute: DBCODE

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Enumerated Domain for Attribute: REACH

L Lower reach of section, 0-50 m

M Middle reach of section, 50-100 m

U Upper reach of section, 100-150 m

Enumerated Domain for Attribute: SECTION

AL	Above Lava Falls, in old-growth forest (1996 only)
CC	Cleacut
OG	Old Growth

Enumerated Domain for Attribute: UNITTYPE

C	Cascade
I	Riffle
IP	Isolated Pools --not connected to main channel
P	Pool
R	Rapid
S	Step (small falls)
SC	Side Channel
NA	Not sampled by unit

Enumerated Domain for Attribute: DBCODE

AS006	FSDB database code AS006
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Enumerated Domain for Attribute: REACH

L	Lower reach of section, 0-50 m
M	Middle reach of section, 50-100 m
U	Upper reach of section,100-150 m

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