

ODFW AQUATIC INVENTORY PROJECT
OREGON PLAN FOR SALMON & WATERSHEDS
STREAM RESTORATION HABITAT REPORT

STREAM: South Fork Little Nestucca River (#NC112)
 BASIN: Nestucca River
 SURVEY TYPE: Reference
 DATE: November 3, 2003
 REPORT PREPARED BY: Paul Jacobsen

The South Fork Little Nestucca River reference site is located just upstream of the companion South Fork Little Nestucca River treatment site. This site was surveyed for reference conditions in 1993, 1996 and 2001. Pool area was reduced by half and pools occurred less frequently, but complex pools increased in the period between 1993 and 2001. Riffle gravel stayed constant while riffle fines decreased. Large wood pieces decreased, while volume and key pieces stayed nearly steady.

Habitat Variable	ODFW	Benchmark	AQI Survey	Post Project	Post Project
	Desirable	Undesirable	9/13/93	8/27/96	6/27/01
Pool Area	>35%	<10%	52.4	23.6	28.6
Pool Frequency	5-8	>20%	3.9	4.4	5.8
Residual Pool Depth	.5-1m	.2-.5m	.39	.60	.79
Complex Pools/km	>2.5	<1	0.0	2.9	2.1
Width/Depth Ratio	<15	>30	17.2	22.3	17.2
Riffle Gravel % area	>35%	<15%	29	29	29
Silt-Sand-Organic %	<8%	>15%	22	19	10
Shade %	>70%	< 60%	79	87	94
LWD - pieces/100m	>20	<10	12.2	5.2	7.7
LWD - Volume/100m	>30	<20	9.4	9.7	10.4
LWD - Key pieces/ 100m	>3	<1	0.2	0.6	0.5

COMMENTS:

There were no potential barriers to upstream fish migration in the surveyed length.

The crew noted evidence of beaver activity during the survey.

**ODFW AQUATIC INVENTORY PROJECT
OREGON PLAN FOR SALMON & WATERSHEDS
STREAM RESTORATION HABITAT REPORT**

STREAM: South Fork Little Nestucca River (NC-112)
BASIN: Nestucca River
SURVEY TYPE: Reference
DATE: June 27, 2001
SURVEY CREW: Rachel Werner, Sean Allen
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 16.4 km²
USGS MAPS: Dolph
ECOREGION: Coast Range Volcanic

GENERAL DESCRIPTION:

The South Fork Little Nestucca River habitat survey extended 622 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 7.4 (range: 5.0 – 10.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 2.0 percent. Riffles (52%) and scour pools (24%) dominated stream habitat. Bedrock (27%) and gravel (25%) dominated stream substrate. Wood volume was low at 10.4 m³/100m.

COMMENTS:

There were no potential barriers to upstream fish migration in the surveyed length.

ODFW AQUATIC INVENTORY PROJECT
OREGON PLAN FOR SALMON & WATERSHEDS
STREAM RESTORATION HABITAT REPORT

STREAM: South Fork Little Nestucca River (#NC112)
 BASIN: Nestucca River
 SURVEY TYPE: Reference
 DATE: September 9, 2002
 SURVEY CREW: Sean Allen, Rachel Werner
 REPORT PREPARED BY: Paul Jacobsen
 BASIN AREA: 16.4 km²
 USGS MAPS: Dolph
 ECOREGION: Coast Range Volcanic

GENERAL DESCRIPTION:

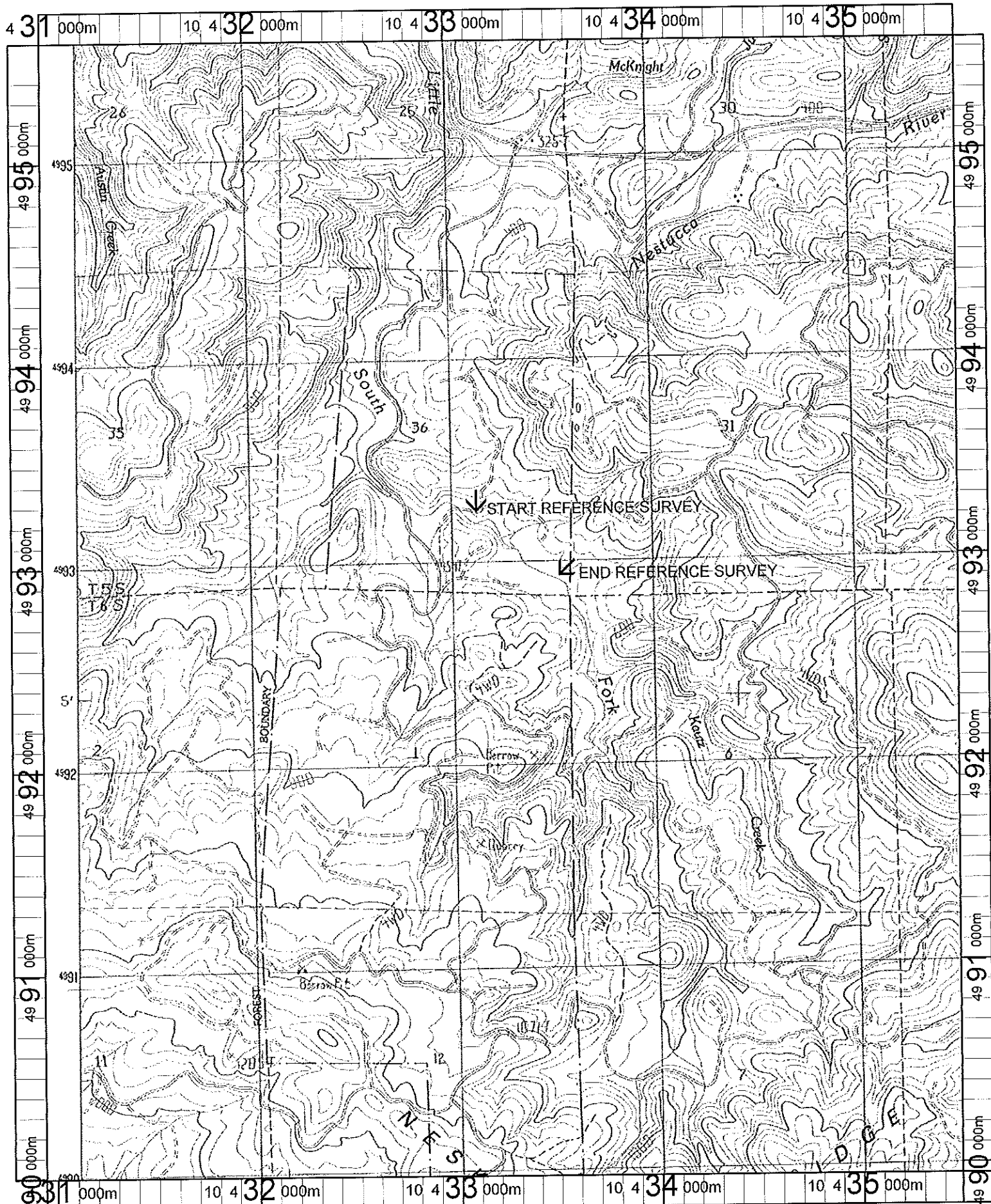
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	ODFW	Benchmark		AQI Survey	Post Project	Post Project	Post Project
Habitat Variable	Desirable	Undesirable		9/13/93	8/27/96	6/27/01	3/5/02
Pool Area	>35%	<10%		52.4	23.6	28.6	30.6
Pool Frequency	5-8	>20%		3.9	4.4	5.8	4.7
Residual Pool Depth	.5-1m	.2-.5m		.39	.60	.79	.82
Complex Pools/km	>2.5	<1		0.0	2.9	2.1	6.0
Width/Depth Ratio	<15	>30		17.2	22.3	17.2	15.0
Riffle Gravel % area	>35%	<15%		29	29	29	30
Silt-Sand-Organic %	<8%	>15%		22	19	10	14
Shade %	>70%	< 60%		79	87	94	
LWD - pieces/100m	>20	<10		12.2	5.2	7.7	5.0
LWD - Volume/100m	>30	<20		9.4	9.7	10.4	6.3
LWD - Key pieces/ 100m	>3	<1		0.2	0.6	0.5	0.5

COMMENTS:

There were no potential barriers to upstream fish migration in the surveyed length.

The crew noted evidence of beaver activity during the survey.



Name: DOLPH
 Date: 1/10/2002
 Scale: 1 inch equals 2000 feet

Location: 10 433243 E 4992771 N
 Caption: 4-6 YEAR REFERENCE SURVEY - SF. LITTLE
 NESTUCCA RIVER - NESTUCCA BASIN

REACH 1

T5S-R10W-S36SE

REACH 1

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

<u>Narrow Valley Floor</u>		<u>Broad Valley Floor</u>	
Steep V-shape	0	Constraining Terraces	0
Moderate V-shape	0	Multiple Terraces	100
Open V-shape	0	Wide Floodplain	0

Valley Width Index avg: 7.4 range: 5.0-10.0

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0	Single Channel	0
Bedrock	0	Multiple Channel	100
Terrace	0	Braided Channel	0
Alt. Terrace/Hill	0		
Landuse	0		

Channel Characteristics

<u>Type</u>	<u>Length(m)</u>	<u>Area (m2)</u>	<u>Dry Units</u>
Primary	622	4,616	0
Secondary	308	789	1

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	6.2	Width	11.5	31.2	28.3
Depth	0.39	Height	0.7	1.3	1.8
		W:D ratio	17.2	Entrenchment	2.9

Stream Flow Type: LF Water Temp: 11.0-11.0°C
Avg. Unit Gradient: 2.0% Habitat Units/100m: 4.6

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	M3	M15

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	7%	Reach avg: 94%
Undercut Banks	3%	Range: 61-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ($\geq 3m \times 0.15m$)	48	7.7
Volume (m ³)	65	10.4
Key pieces ($\geq 10m \times 0.6m$)	3	0.5

REACH 1 T5S-R10W-S36SE REACH 1

HABITAT DETAIL

Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbbl	Bldr	Bdrk
POOL-BACKWATER	1	10	1.8	0.35	18	0	5	15	45	30	5	0
POOL-BEAVER DAM	2	23	8.9	0.70	205	0	30	50	20	0	0	0
POOL-ISOLATED	2	6	2.1	0.40	14	0	55	45	0	0	0	0
POOL-LATERAL SCOUR	5	122	7.1	1.14	845	0	8	11	28	23	19	11
POOL-PLUNGE	2	14	6.6	0.80	91	0	4	13	24	17	3	40
POOL-STRAIGHT SCOUR	2	37	10.1	0.95	376	0	8	13	15	13	3	50
PUDDLED CHANNEL	1	210	1.8	0.30	378	0	40	50	10	0	0	0
RAPID/BEDROCK	3	52	9.2	0.11	485	0	1	4	4	2	2	88
RAPID/BOULDERS	2	38	3.9	0.15	133	0	5	5	35	35	20	0
RIFFLE	15	360	6.0	0.19	2,429	2	3	7	29	15	8	38
RIFFLE W/ POCKETS	2	49	7.5	0.28	385	0	0	5	34	21	0	40
STEP/BEAVER DAM	2	3	7.6	0.06	21	0	25	40	25	10	0	0
STEP/BOULDERS	1	0	4.3	0.25	2	0	0	0	0	30	40	30
STEP/COBBLE	1	1	1.0	0.01	1	0	0	0	80	20	0	0
STEP/LOG	2	4	6.6	0.06	23	0	9	31	31	24	5	0
Total:	43	930	6.2	0.39	5,404	2	Avg: 9	15	25	16	7	27

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m ²)	Percent	Large Boulders Number	#/100m ²
Dammed & BW Pools	5	40	4.7	0.51	237	4.38	0	0.0
Scour Pools	9	173	7.6	1.02	1,311	24.26	0	0.0
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	17	409	6.2	0.20	2,814	52.07	2	0.1
Rapids	5	91	7.1	0.13	618	11.44	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	6	8	5.6	0.08	46	0.86	0	0.0
Dry	1	210	1.8	0.30	378	6.99	0	0.0

POOL SUMMARY

	Total	#/Km
All Pools	14	15.0
Pools ≥1m deep:	4	4.3
Complex pools (LWD pieces ≥3):	2	2.1
Pool Frequency (channel widths/pool):	5.8	
Residual pool depth (avg)	0.79m	

STREAM SUMMARY

SF L NESTUCCA REFERENCE (#112)

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Substrate Percent Wetted Area						Total Large Boulder
					S/O	Sand	Grvl	Cbbl	Bldr	Bdrk	
43	930	6.2	0.39	5,404	9	15	25	16	7	27	2

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	1,311	24.3
Backwater Pools	237	4.4
Glide	0	0.0
Riffle	2,814	52.1
Rapid	618	11.4
Cascade	0	0.0
Step	46	0.9
Dry	378	7.0

REACH 1 RIPARIAN ZONE VEGETATION SUMMARY REACH 1

Summary of Riparian Zone (0-30m) (3 transects)

Total hardwoods/1000 ft	792
Total conifers/1000 ft	1,504
Total conifers >20" dbh/1000 ft	0
Total conifers >35" dbh/1000 ft	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
	3-15cm	3.7	1.3	4.7	0.7	2.3	5.7	10.7
15-30cm	3.7	2.3	5.3	1.3	2.7	1.3	11.7	5.0
30-50cm	0.3	0.0	1.0	0.0	1.0	0.3	2.3	0.3
50-90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m ²	7.7	3.7	11.0	2.0	6.0	7.3	8.2	4.3

Canopy closure and ground cover

	Zone 1 0-10 meters	Zone 2 10-20 meters	Zone 3 20-30 meters
	(%)	(%)	(%)
Canopy closure	59	72	77
Shrub cover	21	21	17
Grass/forb cover	56	38	52

Predominant landform in each zone

	Zone 1 0-10 meters	Zone 2 10-20 meters	Zone 3 20-30 meters
	Hillslope	17	33
High terrace	33	67	50
Low terrace	50	0	0
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	0
Riprap	0	0	0
Surface slope (%)	6	10	12

Summary of Riparian Zone (0-30m) for all reaches (3 transects)

Summary of riparian zone (0-100ft) extrapolated to 1,000 feet along stream

Total hardwoods/1000 ft	792
Total conifers/1000 ft	1,504
Total conifers >20" dbh/1000 ft	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zones 1-3	
	Conifer	Hardwood
3-15cm	10.7	7.7
15-30cm	11.7	5.0
30-50cm	2.3	0.3
50-90cm	0.0	0.0
>90cm	0.0	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

VEGETATION DETAIL

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90	
7	LF	1	LT	4.0	70	50	50	Conifer	2	0	1	0	0	
								Hardwood	0	0	0	0	0	
7	LF	2	HT	2.0	85	0	5	Conifer	1	9	1	0	0	
								Hardwood	0	0	0	0	0	
7	LF	3	HS	12.0	90	0	15	Conifer	0	2	1	0	0	
								Hardwood	11	0	0	0	0	VINE MAPLE
7	RT	1	HT	2.0	0	15	85	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
7	RT	2	HS	15.0	60	10	20	Conifer	1	0	2	0	0	
								Hardwood	1	1	0	0	0	
7	RT	3	HS	20.0	85	0	5	Conifer	0	2	1	0	0	
								Hardwood	0	0	1	0	0	
17	LF	1	HS	25.0	80	5	10	Conifer	6	8	0	0	0	
								Hardwood	2	1	0	0	0	FIR
17	LF	2	HS	28.0	75	5	80	Conifer	0	3	0	0	0	
								Hardwood	0	0	0	0	0	CHICKEN MOSS
17	LF	3	HS	30.0	80	10	80	Conifer	0	3	0	0	0	
								Hardwood	0	0	0	0	0	
17	RT	1	LT	3.0	50	20	80	Conifer	3	0	0	0	0	
								Hardwood	0	4	0	0	0	
17	RT	2	HT	8.0	80	0	40	Conifer	9	1	0	0	0	
								Hardwood	0	1	0	0	0	SPRUCE
17	RT	3	HT	3.0	80	30	70	Conifer	6	0	0	0	0	
								Hardwood	2	3	0	0	0	
24	RT	1	LT	4.0	60	5	95	Conifer	0	0	0	0	0	
								Hardwood	2	2	0	0	0	
24	RT	2	HT	0.0	60	30	60	Conifer	3	1	0	0	0	
								Hardwood	1	2	0	0	0	
24	RT	3	HT	2.0	75	30	70	Conifer	1	1	1	0	0	
								Hardwood	3	1	0	0	0	
24	LF	1	HT	0.0	95	30	15	Conifer	0	3	0	0	0	
								Hardwood	0	0	0	0	0	
24	LF	2	HT	9.0	70	80	20	Conifer	0	2	0	0	0	
								Hardwood	0	0	0	0	0	
24	LF	3	HT	2.0	50	30	70	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	