

Eventlabel	FIL2014_Wed_a_f_05
Campaign	Filchner 2014
Species	Weddell seal (<i>Leptonychotes weddellii</i>)
Age	Adult
Sex	Female
Number	
Length	244 cm
Girth	203 cm
Weight [estimated]	400
Weight [calculated]	
Weight [measured]	
ARGOS PTT ID	13063
Transmitter type	SMRU series 9000 SRDL CTD satellite tag with 0.5 Watt WildCat RF unit, D
Manufacturer	SMRU
PTT Serial Number	12824
PTT Software	
Setting protocol	<p>Software specification for CTD_GEN_13A deployment (Standard CTD)</p> <p>Valid for dates in years 2013 to 2016</p> <p>Transmitting via ARGOS Argos page transmission sequences:</p> <p style="padding-left: 40px;">Until day 1464: 0 0 1 0 0 2 3 0 0 4 5 An additional diagnostics page (6) is sent every 60 transmissions</p> <p>Argos airtest for first 7 hours: Transmission interval is chosen randomly between 48 and 72 seconds</p> <p>Satellite availability (UTC):</p> <p style="padding-left: 40px;">00: -- on -- 01: -- on -- 02: -- on -- 03: -- on -- 04: -- on -- 05: -- on -- 06: -- on -- 07: -- on -- 08: -- on -- 09: -- on -- 10: -- on -- 11: -- on -- 12: -- on -- 13: -- on -- 14: -- on -- 15: -- on -- 16: -- on -- 17: -- on -- 18: -- on -- 19: -- on -- 20: -- on -- 21: -- on --</p>

22: -- on --
23: -- on --

Transmission targets:

56000 transmissions after 365 days

Normal interval between Argos transmissions: 40 secs
In Haulouts: ON (one tx every 1 min 20 secs) for first 5 hours
then cycling OFF for 3 hours, ON for 2 hours

Check sensors every 4 secs
When near surface (shallower than 10m), check wet/dry every 1 sec
Consider wet/dry sensor failed if wet for 7 days or dry for 99 days
Dives start when wet and below 6m for 8 secs
and end when dry, or above 6m
Do not separate 'Deep' dives
A cruise begins if there has been no dive for 9 mins
A haulout begins when dry for 10 mins
and ends when wet for 40 secs

Dive shape (normal dives):
4 points per dive using broken-stick algorithm

Dive shape (deep dives):
none

CTD profiles: max 2000 dbar up to 4 dbar in 2 dbar bins.
Note: these values should now be given in cbar. They have been auto-converted from dbar because
CTD_HI_RES_PRESSURE is not specified

Temperature: Collected, Stored. Valid range: -2.5 to 30.2 degC
Conductivity: Collected, Not stored.
Salinity: Calculated, Stored. Valid range: 28.9 to 37.1
Fluorescence: Not collected.
Oxygen: Not collected.
Light level: Not collected.

Send the deepest upcast in each 6-hour period.
An upcast is collected if the depth exceeds:
1000m in hour 1
400m in hour 2
200m in hour 3
100m in hour 4
50m in hour 5
30m in hour 6

In addition, a replacement upcast is collected if the depth exceeds the depth of the current
upcast by 20%.

During profile, sample CTD sensor every 2 seconds when deeper than 500 m, every 1
seconds when shallower than 500 m.

Each profile contains 16 cut points
consisting of 8 fixed points, maximum depth, minimum depth, 6 broken-stick
points

A set of fixed point is selected according to depth:
10,12,14,16,18,20,24,30
10,14,20,26,30,36,40,50
10,20,30,40,50,60,70,75
10,20,30,40,50,60,75,100
10,20,30,50,75,100,125,150
10,20,30,50,75,100,150,200
10,20,30,50,100,150,200,300
10,20,50,100,150,200,300,400
10,20,50,100,200,300,400,500
10,20,50,100,200,300,500,700
20,50,100,200,300,500,700,1000
50,100,200,300,500,700,1000,1500

No GPS data

TRANSMISSION BUFFERS (in RAM):

Dives in groups of 3 (10.4167 days @ 10mins/dive): 500 = 2000 bytes

No 'deep' dives

Haulouts: 50 = 200 bytes

6-hour Summaries in groups of 3 (7.5 days): 10 = 40 bytes

No Timelines

Cruises: 50 = 200 bytes

No Diving periods

No Spot depths

No Emergence records

No Dive duration histograms

No Max depth histograms

No Depth & Temperature histograms

CTD casts (7.5 days): 30 = 120 bytes

No GPS fixes

No Spot CTD's

No Vemco VMT's

TOTAL 2560 bytes (of about 21000 available)

MAIN BUFFERS (in 8 or 24 Mb Flash):

Dive in groups of 3 (10.4167 days @ 10mins/dive): 500 x 104 bytes = 52000 bytes

No 'deep' dives

Haulout: 50 x 32 bytes = 1600 bytes

6-hour summaries in groups of 3 (7.5 days): 10 x 88 bytes = 880 bytes

No Depth & Temperature histograms

No timelines

Cruise: 50 x 32 bytes = 1600 bytes

No diving periods

No spot depths

No emergence records

No Duration histograms

No Max depth histograms

CTD casts (7.5 days): 30 x 160 bytes = 4800 bytes

No GPS fixes

No spot CTD's

No Vemco VMT's

TOTAL 59 kb (from 8192 kb available)

PAGE CONTENTS:

PAGE 0 (Argos, 247 bits):

PTT NUMBER OVERHEAD (28-bit code)

-----[8 bits: 0 - 7]

PAGE NUMBER

-----[3 bits: 8 - 10]

DIAGNOSTICS in format 0:

Max depth ever: Lookup with 128 bins: <2.5,2.5-5,5-7.5,7.5-10,10-12.5,12.5-15,15-17.5,17.5-20,20-22.5,22.5-25,25-27.5,27.5-30,30-32.5,32.5-35,35-40,40-45,45-50,50-55,55-60,60-65,65-70,70-75,75-80,80-85,85-90,90-95,95-100,100-105,105-110,110-115,115-120,120-125,125-130,130-135,135-140,140-145,145-150,150-155,155-160,160-165,165-170,170-175,175-180,180-185,185-190,190-195,195-200,200-205,205-210,210-215,215-220,220-225,225-230,230-240,240-250,250-260,260-270,270-280,280-290,290-300,300-310,310-320,320-330,330-340,340-350,350-360,360-370,370-380,380-390,390-400,400-425,425-450,450-475,475-500,500-525,525-550,550-575,575-600,600-625,625-650,650-675,675-700,700-725,725-750,750-775,775-800,800-825,825-850,850-875,875-900,900-925,925-950,950-975,975-1000,1000-1025,1025-1050,1050-1075,1075-1100,1100-1125,1125-1150,1150-1175,1175-1200,1200-1225,1225-1250,1250-1275,1275-1300,1300-1325,1325-1350,1350-1375,1375-1400,1400-1425,1425-1450,1450-1475,1475-1500,1500-1550,1550-1600,1600-1650,1650-1700,1700-1750,1750-1800,1800-1850,1850-1900,1900-1950,1950-2000,2000-2050,2050-2100,2100-2150, >2150 in units of 0.1 m (range: 0 to

2150 m)
-----[7 bits: 11 - 17]

DIVE group in format 0:
Normal dives transmitted in groups of 3
Time of start of last dive: max 5 days 12 hours @ 30 secs= 15840
tx as raw 14 bits in units of 1 (range: 0 to 16383) OK
(recommended sell-by 5 days 11 hours, actual: 5 days is OK)
Number of records: raw 2 bits in units of 1 (range: 0 to 3)
Reason for end: -- not transmitted --
Group number: -- not transmitted --
Max depth: -- not transmitted --
Dive duration: odlog 2/5 in units of 16 s (range: 0 to 7608 s)
Mean speed: -- not transmitted --
Profile data (4 depths/times, 0 speeds):
Depth profile: Lookup with 128 bins: <2.5,2.5-5,5-7.5,7.5-10,10-12.5,12.5-15,15-17.5,17.5-20,20-22.5,22.5-25,25-27.5,27.5-30,30-32.5,32.5-35,35-40,40-45,45-50,50-55,55-60,60-65,65-70,70-75,75-80,80-85,85-90,90-95,95-100,100-105,105-110,110-115,115-120,120-125,125-130,130-135,135-140,140-145,145-150,150-155,155-160,160-165,165-170,170-175,175-180,180-185,185-190,190-195,195-200,200-205,205-210,210-215,215-220,220-225,225-230,230-240,240-250,250-260,260-270,270-280,280-290,290-300,300-310,310-320,320-330,330-340,340-350,350-360,360-370,370-380,380-390,390-400,400-425,425-450,450-475,475-500,500-525,525-550,550-575,575-600,600-625,625-650,650-675,675-700,700-725,725-750,750-775,775-800,800-825,825-850,850-875,875-900,900-925,925-950,950-975,975-1000,1000-1025,1025-1050,1050-1075,1075-1100,1100-1125,1125-1150,1150-1175,1175-1200,1200-1225,1225-1250,1250-1275,1275-1300,1300-1325,1325-1350,1350-1375,1375-1400,1400-1425,1425-1450,1450-1475,1475-1500,1500-1550,1550-1600,1600-1650,1650-1700,1700-1750,1750-1800,1800-1850,1850-1900,1900-1950,1950-2000,2000-2050,2050-2100,2100-2150, >2150 in units of 0.1 m (range: 0 to 2150 m)
Profile times: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)
Speed profile: -- not transmitted --
Residual: -- not transmitted --
Calculation time: -- not transmitted --
Surface duration: odlog 2/4 in units of 2.5 s (range: 0 to 588.75 s)
cf. cruise starts after 9 mins (540 secs)
Dive area: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)
-----[229 bits: 18 - 246]

Available bits used exactly
=== End of page 0 ===

PAGE 1 (Argos, 247 bits):
PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[3 bits: 8 - 10]

DIAGNOSTICS in format 1:
TX number: wraparound 11 bits in units of 32 (range: 0 to 65504)
-----[11 bits: 11 - 21]

CRUISE group in format 0:
Number of records: raw 1 bits in units of 1 (range: 0 to 1)
Cruise number: wraparound 4 bits in units of 1 (range: 0 to 15)
Start time: -- not transmitted --
End time: max 5 days 12 hours @ 2 mins= 3960
tx as raw 12 bits in units of 1 (range: 0 to 4095) OK
(recommended sell-by 5 days 11 hours, actual: 5 days 4 hours is OK)
Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s)
cf. Max duration is 16 hours
Speed: -- not transmitted --
Reason for end: -- not transmitted --
-----[26 bits: 22 - 47]

HAULOUT in format 0:
Number of records: raw 1 bits in units of 1 (range: 0 to 1)
Haulout number: wraparound 3 bits in units of 1 (range: 0 to 7)

Start time: -- not transmitted --
End time: max 5 days 12 hours @ 2 mins= 3960
tx as raw 12 bits in units of 1 (range: 0 to 4095) OK
(recommended sell-by 5 days 11 hours, actual: 5 days 4 hours is OK)
Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s)
cf. Max duration is 16 hours
Reason for end: -- not transmitted --
Contiguous: -- not transmitted --
-----[25 bits: 48 - 72]

SUMMARY group in format 0:

Transmitted in groups of 3
Record could be in buffer for 7 days 12 hours
End time: max 7 days 12 hours @ 6 hours= 30
tx as raw 5 bits in units of 1 (range: 0 to 31) OK
(recommended sell-by 7 days 11 hours, actual: 7 days is OK)
Number of records: raw 1 bits in units of 1 (range: 0 to 1)
Cruising time: -- not transmitted --
Haulout time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)
Dive time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)
Deep Dive time: -- not transmitted --
Normal dives:

Avg max dive depth: Lookup with 128 bins: <2.5,2.5-5,5-7.5,7.5-10,10-12.5,12.5-15,15-17.5,17.5-20,20-22.5,22.5-25,25-27.5,27.5-30,30-32.5,32.5-35,35-40,40-45,45-50,50-55,55-60,60-65,65-70,70-75,75-80,80-85,85-90,90-95,95-100,100-105,105-110,110-115,115-120,120-125,125-130,130-135,135-140,140-145,145-150,150-155,155-160,160-165,165-170,170-175,175-180,180-185,185-190,190-195,195-200,200-205,205-210,210-215,215-220,220-225,225-230,230-240,240-250,250-260,260-270,270-280,280-290,290-300,300-310,310-320,320-330,330-340,340-350,350-360,360-370,370-380,380-390,390-400,400-425,425-450,450-475,475-500,500-525,525-550,550-575,575-600,600-625,625-650,650-675,675-700,700-725,725-750,750-775,775-800,800-825,825-850,850-875,875-900,900-925,925-950,950-975,975-1000,1000-1025,1025-1050,1050-1075,1075-1100,1100-1125,1125-1150,1150-1175,1175-1200,1200-1225,1225-1250,1250-1275,1275-1300,1300-1325,1325-1350,1350-1375,1375-1400,1400-1425,1425-1450,1450-1475,1475-1500,1500-1550,1550-1600,1600-1650,1650-1700,1700-1750,1750-1800,1800-1850,1850-1900,1900-1950,1950-2000,2000-2050,2050-2100,2100-2150,>2150 in units of 0.1 m (range: 0 to 2150 m)

SD max dive depth: odlog 2/4 in units of 5 m (range: 0 to 1177.5 m)

Max max dive depth: Lookup with 128 bins: <2.5,2.5-5,5-7.5,7.5-10,10-115,115-120,120-125,125-130,130-135,135-140,140-145,145-150,150-155,155-160,160-165,165-170,170-175,175-180,180-185,185-190,190-195,195-200,200-205,205-210,210-215,215-220,220-225,225-230,230-240,240-250,250-260,260-270,270-280,280-290,290-300,300-310,310-320,320-330,330-340,340-350,350-360,360-370,370-380,380-390,390-400,400-425,425-450,450-475,475-500,500-525,525-550,550-575,575-600,600-625,625-650,650-675,675-700,700-725,725-750,750-775,775-800,800-825,825-850,850-875,875-900,900-925,925-950,950-975,975-1000,1000-1025,1025-1050,1050-1075,1075-1100,1100-1125,1125-1150,1150-1175,1175-1200,1200-1225,1225-1250,1250-1275,1275-1300,1300-1325,1325-1350,1350-1375,1375-1400,1400-1425,1425-1450,1450-1475,1475-1500,1500-1550,1550-1600,1600-1650,1650-1700,1700-1750,1750-1800,1800-1850,1850-1900,1900-1950,1950-2000,2000-2050,2050-2100,2100-2150,>2150 in units of 0.1 m (range: 0 to 2150 m)

Avg dive duration: odlog 2/5 in units of 16 s (range: 0 to 7608 s)

SD dive duration: odlog 1/4 in units of 60 s (range: 0 to 2790 s)

Max dive duration: odlog 2/5 in units of 16 s (range: 0 to 7608 s)

Avg surface duration: -- not transmitted --

SD surface duration: -- not transmitted --

Max surface duration: -- not transmitted --

Avg speed in dive: -- not transmitted --

Number of dives: odlog 1/4 in units of 2 (range: 0 to 93)

Deep dives:

Avg max dive depth: -- not transmitted --

SD max dive depth: -- not transmitted --

Max max dive depth: -- not transmitted --

Avg dive duration: -- not transmitted --

SD dive duration: -- not transmitted --

Max dive duration: -- not transmitted --

Avg surface duration: -- not transmitted --

SD surface duration: -- not transmitted --

Max surface duration: -- not transmitted --

Avg speed in dive: -- not transmitted --

Number of dives: -- not transmitted --

Avg SST: -- not transmitted --
-----[174 bits: 73 - 246]

Available bits used exactly
=== End of page 1 ===

PAGE 2 (Argos, 247 bits):

PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[3 bits: 8 - 10]

CTD PROFILE in format 0:

End time: max 7 days @ 10 mins = 1008
tx as raw 10 bits in units of 1 (range: 0 to 1023) OK
(recommended sell-by 6 days 23 hours, actual: 6 days 18 hours is OK)

CTD cast number: -- not transmitted --

Note: these old-style dbar pressures are internally converted to cbar

Min pressure: -- not transmitted --

Max pressure: raw 10 bits in units of 2 dbar (range: 4 to 2050 dbar)

Min temperature: raw 15 bits in units of 0.001 (range: 2.5 to 35.267 = -2.5 to 30.267
°C in steps of 0.001 °C)

Max temperature: raw 15 bits in units of 0.001 (range: 2.5 to 35.267 = -2.5 to 30.267
°C in steps of 0.001 °C)

cf. Valid temperatures: -2.5 to 30.2 degC

Min salinity: raw 13 bits in units of 1 mPSU (range: 28900 to 37091 mPSU)

Max salinity: raw 13 bits in units of 1 mPSU (range: 28900 to 37091 mPSU)

cf. Valid salinity: 28.9 to 37.1

Number of samples: -- not transmitted --

8 profile points 0 to 7 (from total of 16 cut points):

Temperature:

Points 0 to 7 are at fixed pressure

8 x Temperature: raw 10 bits in units of 0.977517 permille (range:
0 to 1000 permille)

Temperature residual: -- not transmitted --

Salinity:

Points 0 to 7 are at fixed pressure

8 x Salinity: raw 10 bits in units of 0.977517 permille (range: 0 to
1000 permille)

Salinity residual: -- not transmitted --

Temperature bounds : -- not transmitted --

Conductivity bounds : -- not transmitted --

Salinity bounds : -- not transmitted --

Min fluoro: -- not transmitted --

Max fluoro: -- not transmitted --

Min DOxy: -- not transmitted --

Max DOxy: -- not transmitted --

Min Light: -- not transmitted --

Max Light: -- not transmitted --

-----[236 bits: 11 - 246]

Available bits used exactly
=== End of page 2 ===

PAGE 3 (Argos, 247 bits):

PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[3 bits: 8 - 10]

DIAGNOSTICS in format 2:

Number of resets: wraparound 2 bits in units of 1 (range: 0 to 3)
-----[2 bits: 11 - 12]

CTD PROFILE in format 1:

End time: max 7 days @ 10 mins= 1008
 tx as raw 10 bits in units of 1 (range: 0 to 1023) OK
 (recommended sell-by 6 days 23 hours, actual: 6 days 18 hours is OK)
 CTD cast number: -- not transmitted --
 Note: these old-style dbar pressures are internally converted to cbar
 Min pressure: -- not transmitted --
 Max pressure: -- not transmitted --
 Min temperature: -- not transmitted --
 Max temperature: -- not transmitted --
 Min salinity: -- not transmitted --
 Max salinity: -- not transmitted --
 Number of samples: -- not transmitted --
 8 profile points 8 to 15 (from total of 16 cut points):
 Temperature:
 Min pressure is sent separately
 Max pressure is sent separately
 6 broken stick pressure bins: raw 10 bits in units of 1 bin (range: 0
 to 1023 bin)
 8 x Temperature: raw 10 bits in units of 0.977517 permille (range:
 0 to 1000 permille)
 Temperature residual: -- not transmitted --
 Salinity:
 Pressure already transmitted
 8 x Salinity: raw 10 bits in units of 0.977517 permille (range: 0 to
 1000 permille)
 Salinity residual: -- not transmitted --
 Temperature bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3 lo/hi)
 Conductivity bounds : -- not transmitted --
 Salinity bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3 lo/hi)
 Min fluoro: -- not transmitted --
 Max fluoro: -- not transmitted --
 Min DOxy: -- not transmitted --
 Max DOxy: -- not transmitted --
 Min Light: -- not transmitted --
 Max Light: -- not transmitted --
 -----[234 bits: 13 - 246]

 Available bits used exactly
 === End of page 3 ===

 PAGE 4 (Argos, 247 bits):
 PTT NUMBER OVERHEAD (28-bit code)
 -----[8 bits: 0 - 7]

 PAGE NUMBER
 -----[3 bits: 8 - 10]

 CTD PROFILE in format 2:

 End time: max 3 days 6 hours @ 10 mins= 468
 tx as raw 9 bits in units of 1 (range: 0 to 511) OK
 (recommended sell-by 3 days 5 hours, actual: 3 days is OK)
 CTD cast number: -- not transmitted --
 Note: these old-style dbar pressures are internally converted to cbar
 Min pressure: -- not transmitted --
 Max pressure: raw 10 bits in units of 2 dbar (range: 4 to 2050 dbar)
 Min temperature: raw 15 bits in units of 0.001 (range: 2.5 to 35.267 = -2.5 to 30.267
 °C in steps of 0.001 °C)
 Max temperature: raw 15 bits in units of 0.001 (range: 2.5 to 35.267 = -2.5 to 30.267
 °C in steps of 0.001 °C)
 cf. Valid temperatures: -2.5 to 30.2 degC
 Min salinity: raw 13 bits in units of 1 mPSU (range: 28900 to 37091 mPSU)
 Max salinity: raw 13 bits in units of 1 mPSU (range: 28900 to 37091 mPSU)
 cf. Valid salinity: 28.9 to 37.1
 Number of samples: -- not transmitted --
 8 profile points 0 to 7 (from total of 16 cut points):
 Temperature:
 Points 0 to 7 are at fixed pressure
 8 x Temperature: raw 10 bits in units of 0.977517 permille (range:

Min Light: -- not transmitted --
Max Light: -- not transmitted --
-----[233 bits: 13 - 245]

UNUSED
-----[1 bits: 246 - 246]

=== End of page 5 ===

PAGE 6 (special diagnostics page sent every 60 transmissions)


PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[3 bits: 8 - 10]

TX number: wraparound 18 bits in units of 1 (range: 0 to 262143)
Current state: raw 3 bits in units of 1 (range: 0 to 7)
Tag time (mm:ss): raw 12 bits in units of 1 secs (range: 0 to 4095 secs)
ADC offset: raw 12 bits in units of 1 A/D units (range: 0 to 4095 A/D units)
Tag hours: wraparound 16 bits in units of 1 hours (range: 0 to 65535 hours)
Aborted tx: wraparound 18 bits in units of 1 (range: 0 to 262143)
Wet/dry status: raw 2 bits in units of 1 (range: 0 to 3)
Wet/dry fail count: wraparound 8 bits in units of 1 (range: 0 to 255)
Body number: raw 16 bits in units of 1 (range: 0 to 65535)
Max depth ever: raw 15 bits in units of 0.1 m (range: 0 to 3276.7 m)
Latest reset hour: raw 16 bits in units of 1 hours (range: 0 to 65535 hours)
Number of resets: wraparound 8 bits in units of 1 (range: 0 to 255)
Wettest (min wet/dry): raw 8 bits in units of 1 (range: 0 to 255)
Driest (max wet/dry): raw 8 bits in units of 1 (range: 0 to 255)
Number of depth spikes: wraparound 16 bits in units of 1 (range: 0 to 65535)
Number of CTD samples: wraparound 22 bits in units of 1 (range: 0 to 4.1943e+06)
-----[198 bits: 11 - 208]

UNUSED
-----[38 bits: 209 - 246]

=== End of page 6 ===

Deployment			
Immobilisation	http://doi.pangaea.de/10.1594/PANGAEA.839451		
Comment	Seal tag Deployment site: Filchner Previous deployment:		
Tag deployed	2014-02-11T11:24	-74.7771	-25.030
Tag retrieved			
First transmission	2014-02-11T12:06:37	-74.784	-24.987
Last transmission	2014-04-01T13:28:14	-74.851	-25.375