

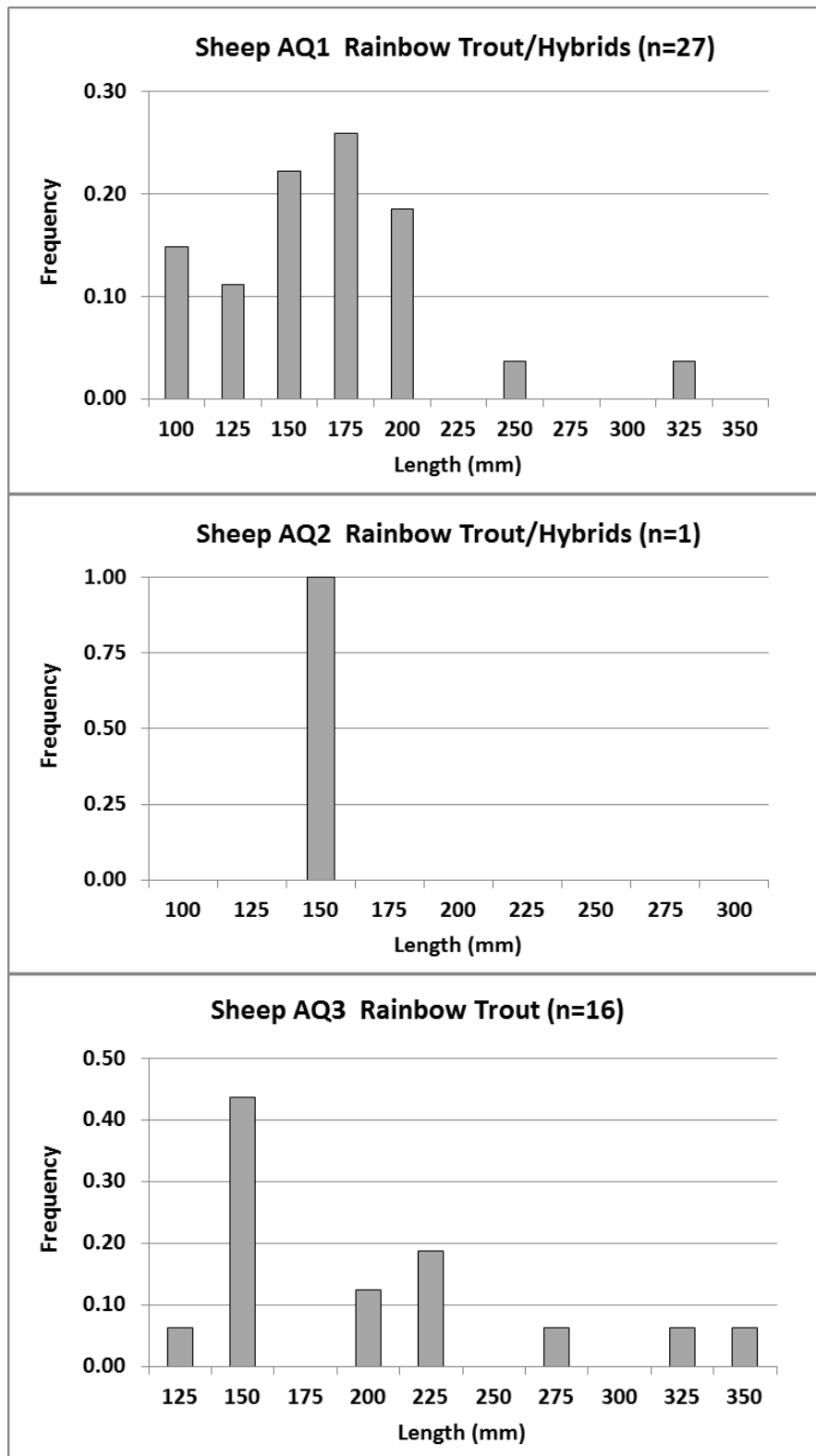
APPENDIX K

Seasonal Fish Size-Frequency Data

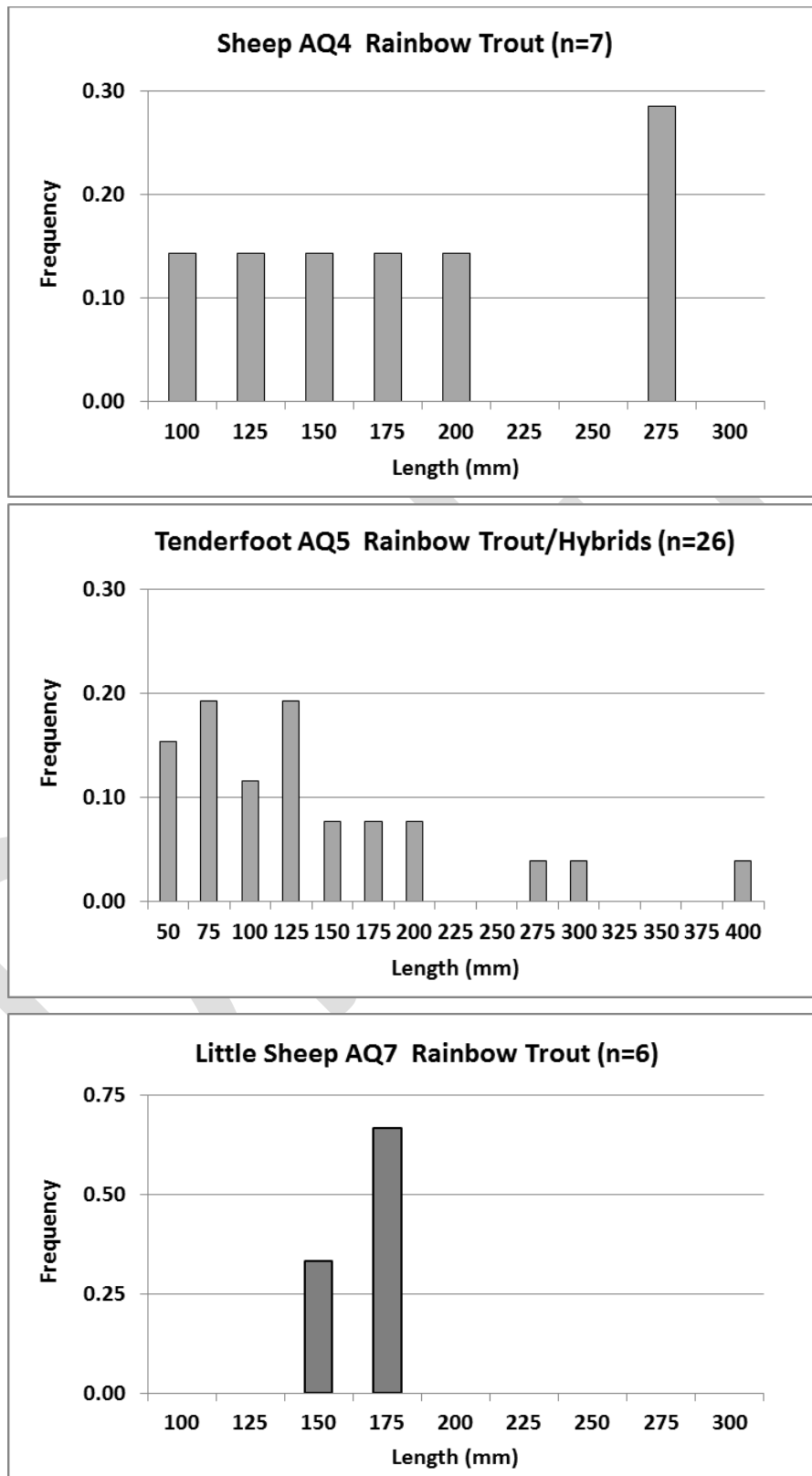
Pages extracted from:

Stagliano, D. 2015. Baseline Aquatic Survey and Assessment of Streams in the Tintina Black Butte Copper Project Area of Meagher County, MT. Tintina Resources Inc. White Sulphur Springs, Montana.

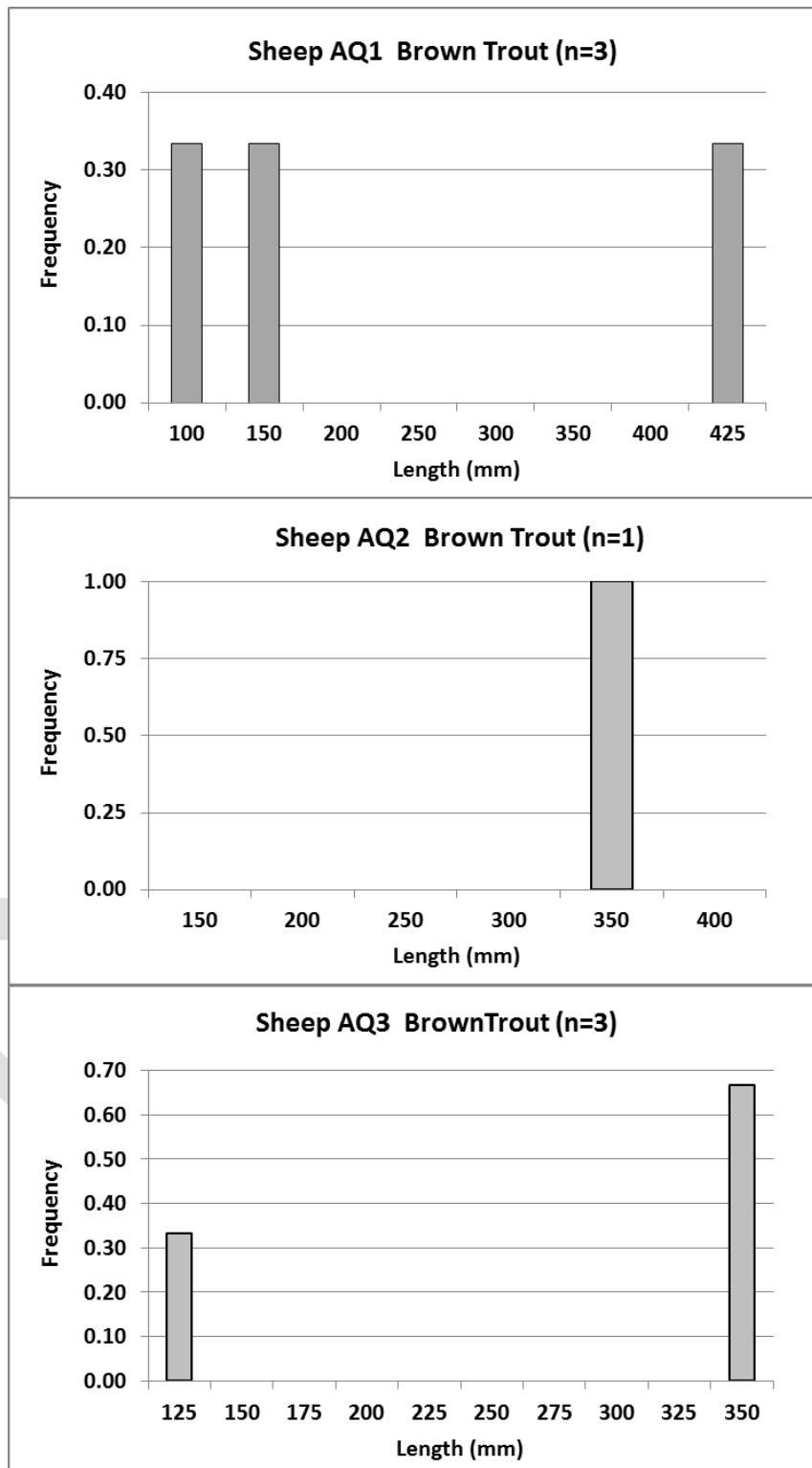
Size frequency collection data for Rainbow Trout and “Cutt-bows” collected at the Tintina Black Butte Mine Sites.



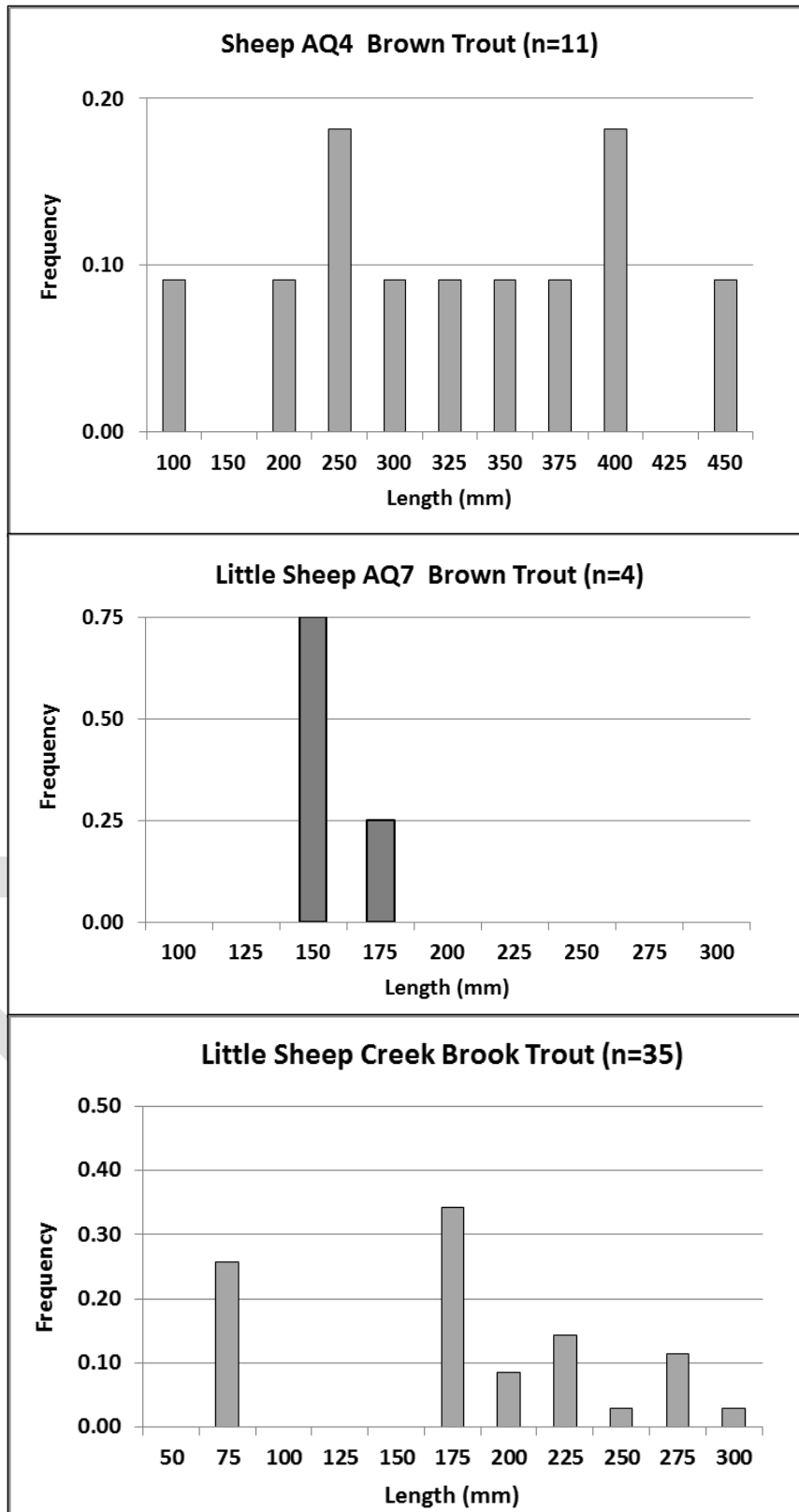
Size frequency collection data for Rainbow Trout and “Cutt-bows” collected at the Tintina Black Butte Mine Sites.



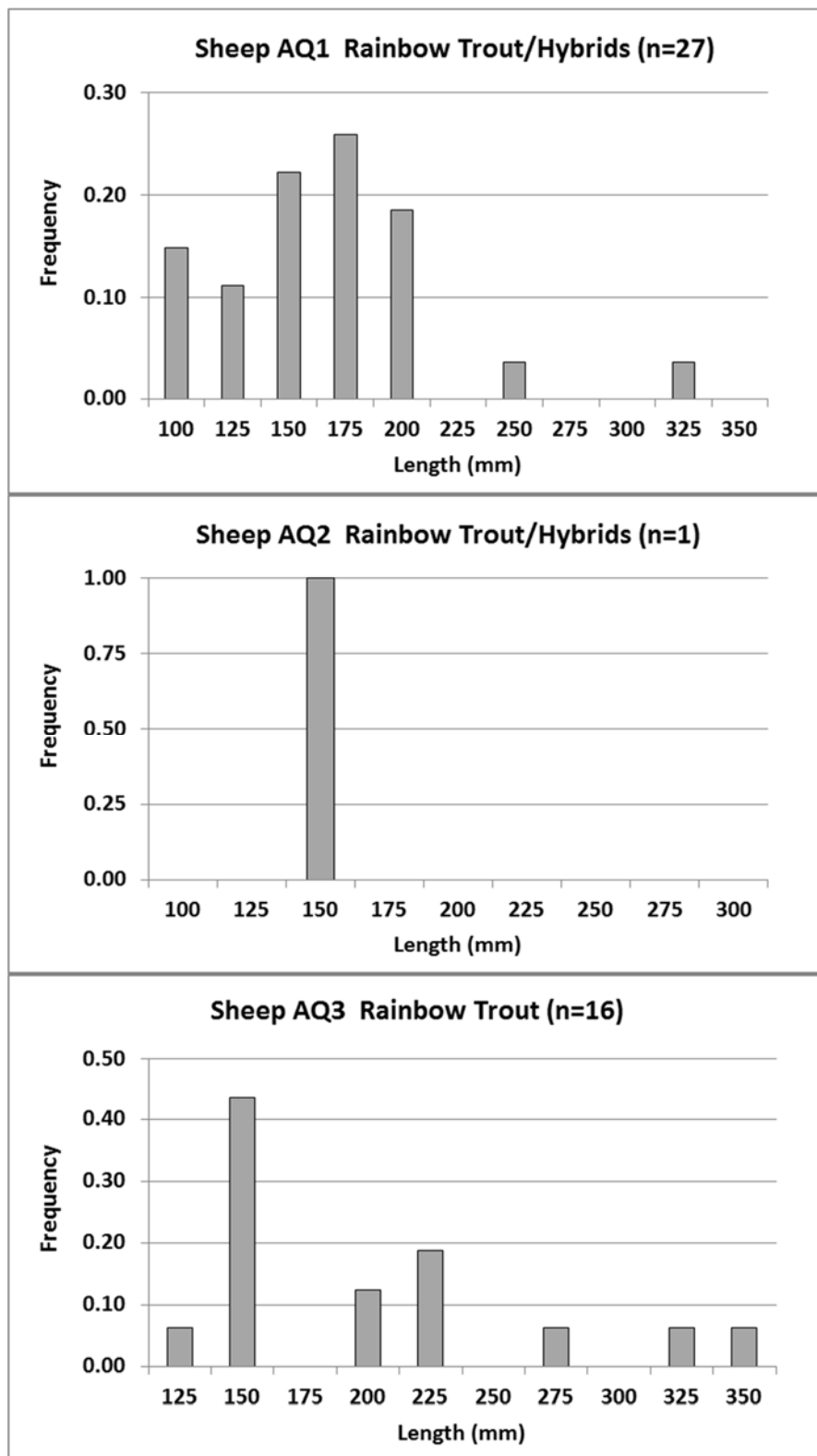
Size frequency collection data for Brown Trout collected at the Tintina Black Butte Mine Sites



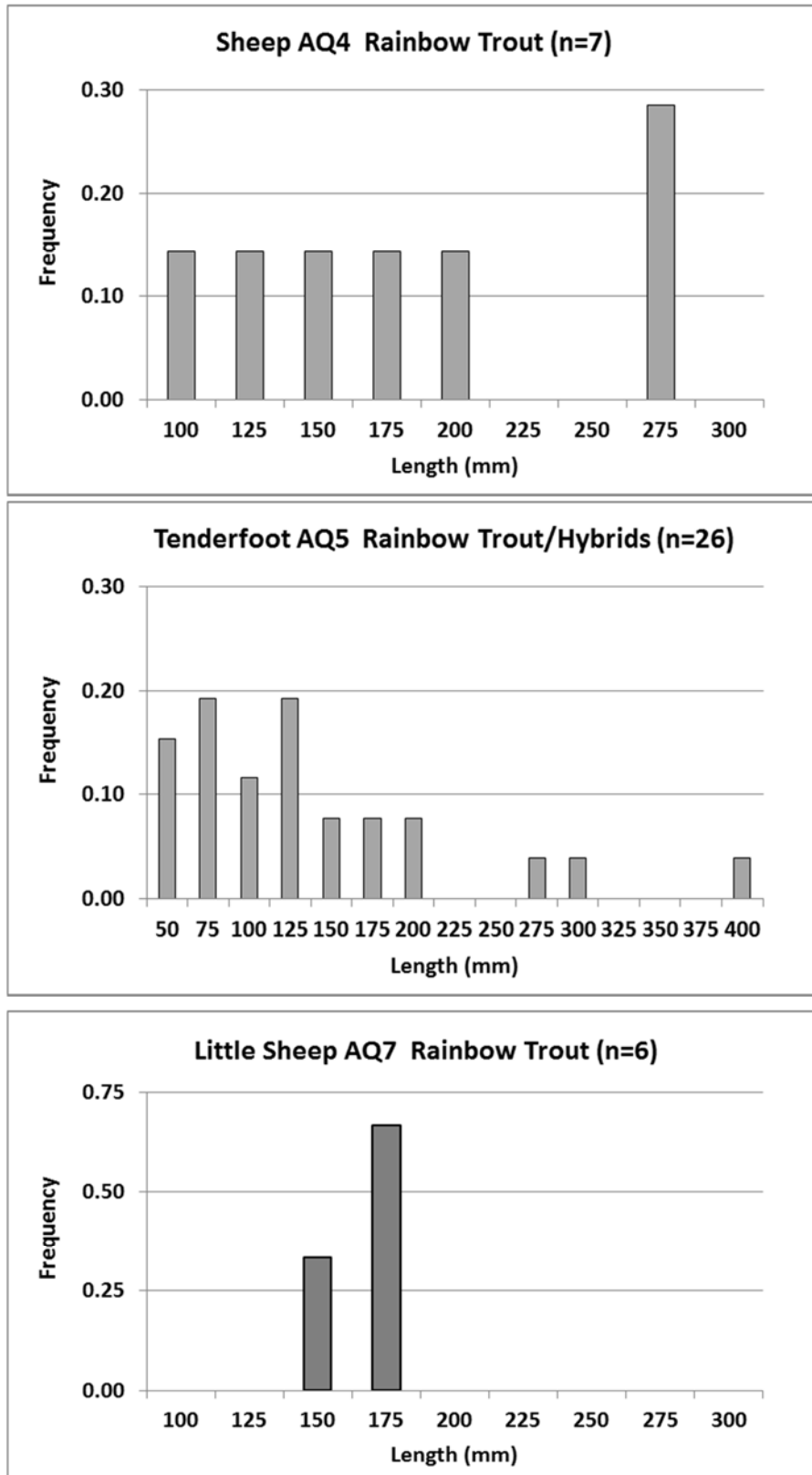
Size-frequency collection data for Brown Trout and Brook Trout collected at the Tintina Black Butte Mine Sites



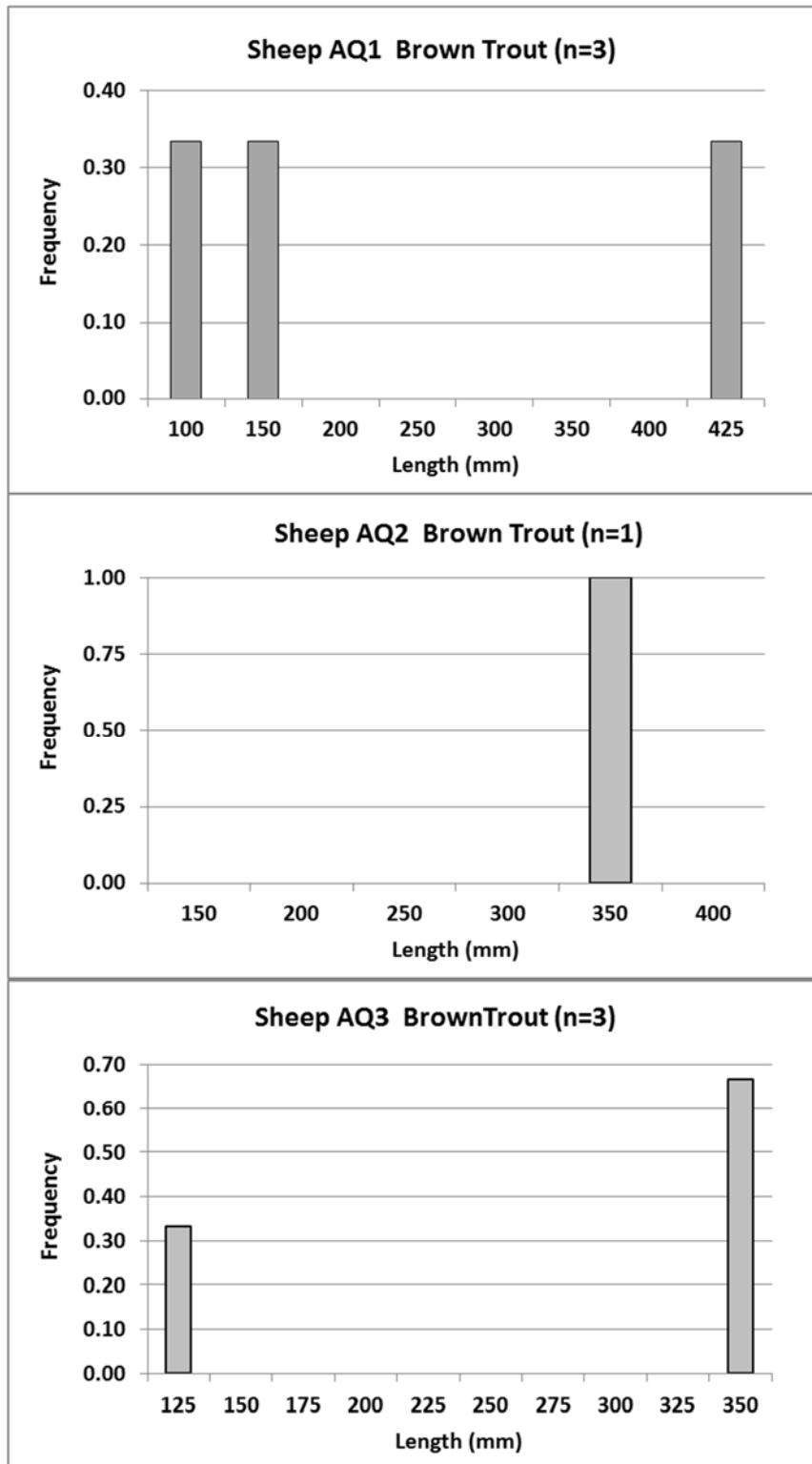
Size frequency collection data for Rainbow Trout and "Cutt-bows" collected during fall 2014 at the Tintina Black Butte Mine Sites.



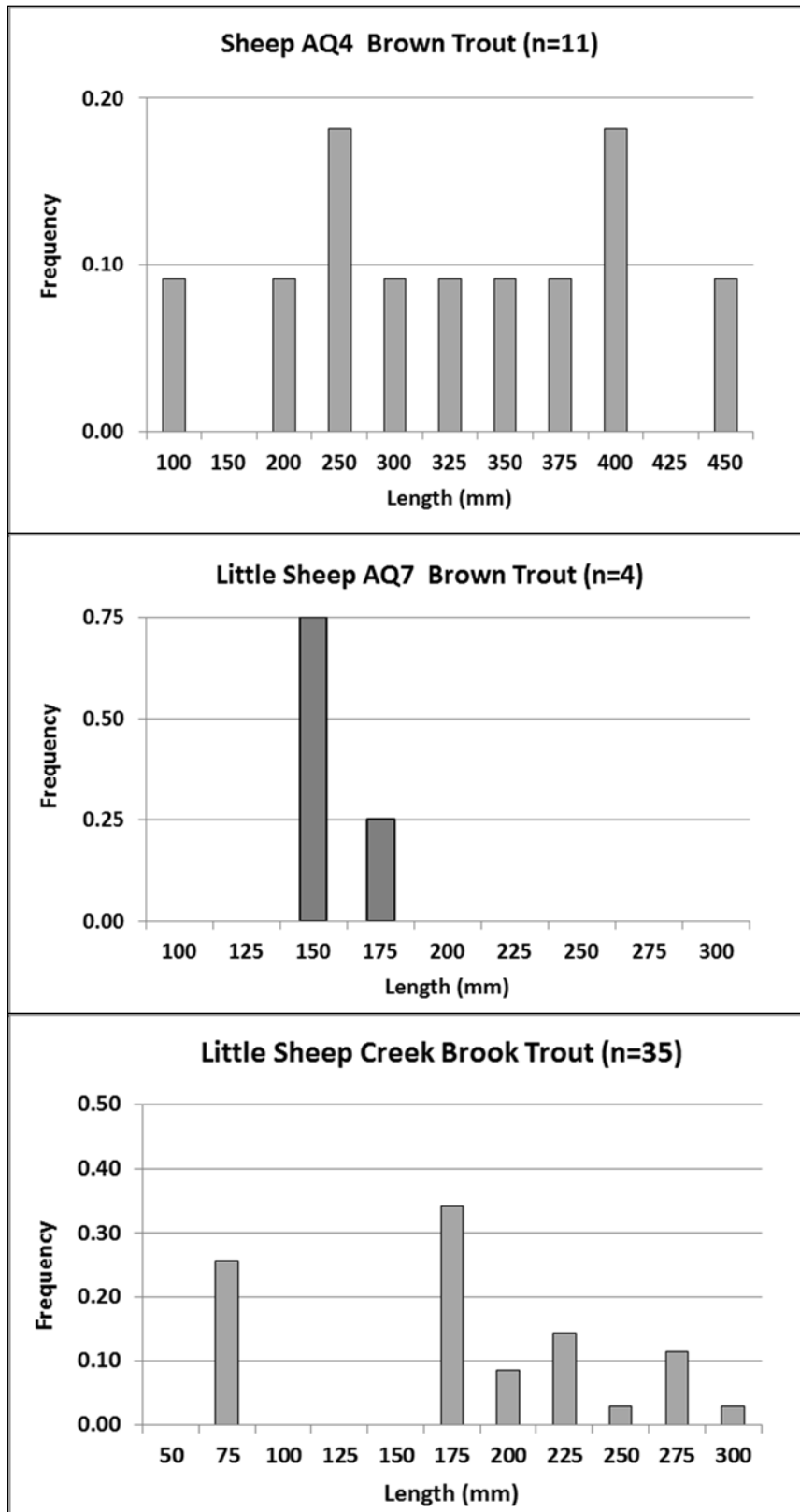
Size frequency collection data for Rainbow Trout and "Cutt-bows" collected during fall 2014 at the Tintina Black Butte Mine Sites.



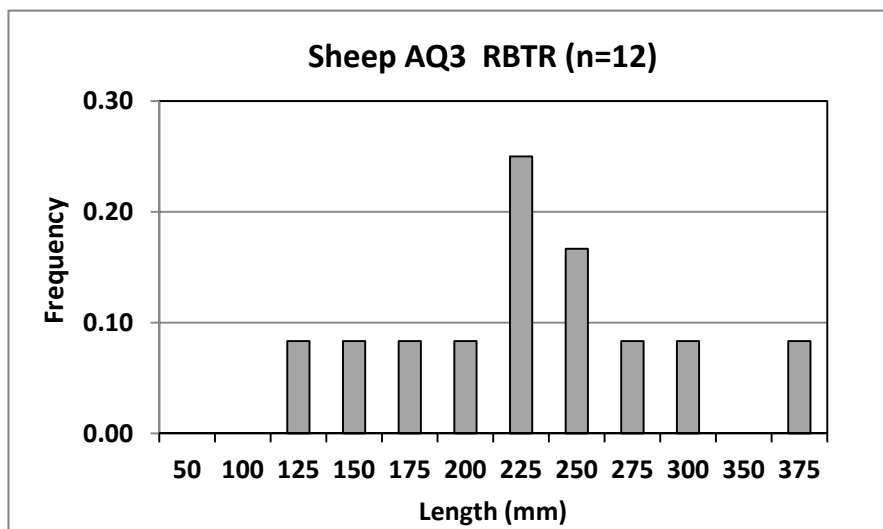
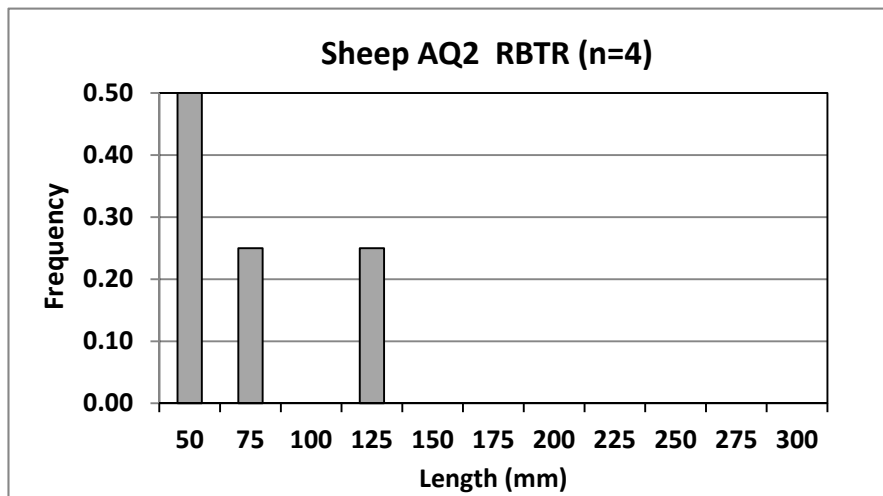
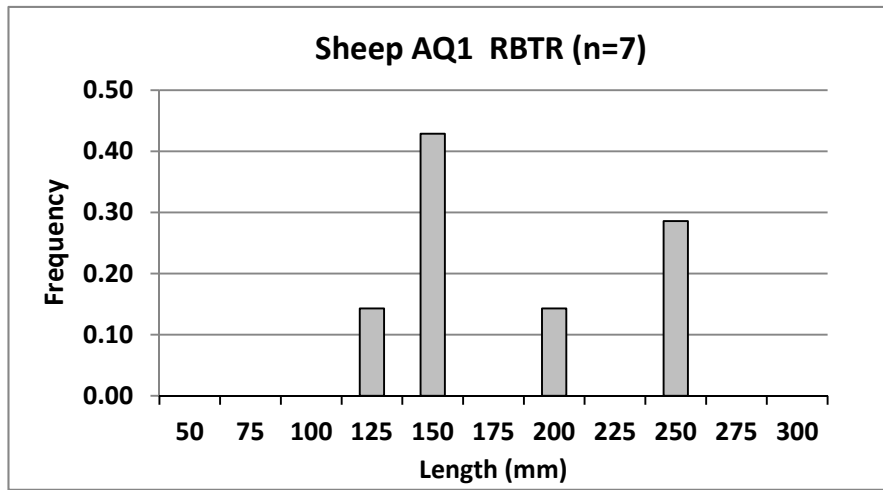
Size frequency collection data for Brown Trout collected during fall 2014 at the Tintina Black Butte Mine Sites



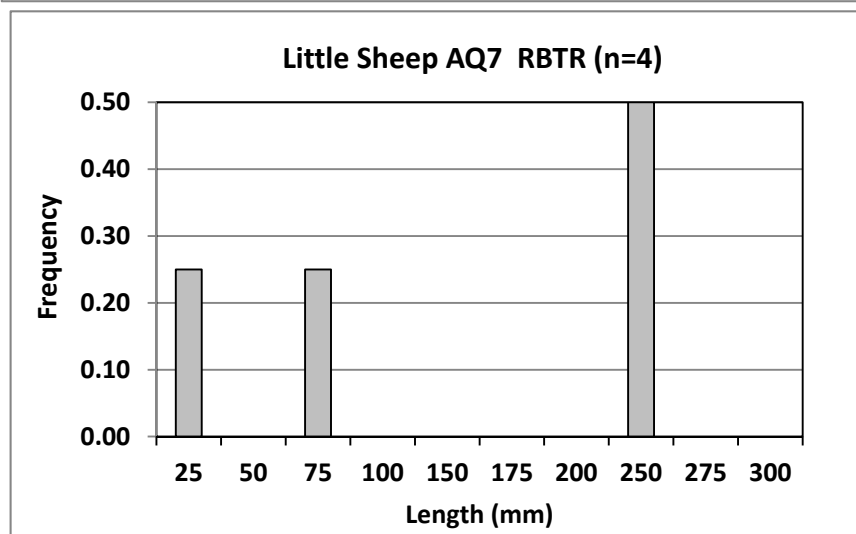
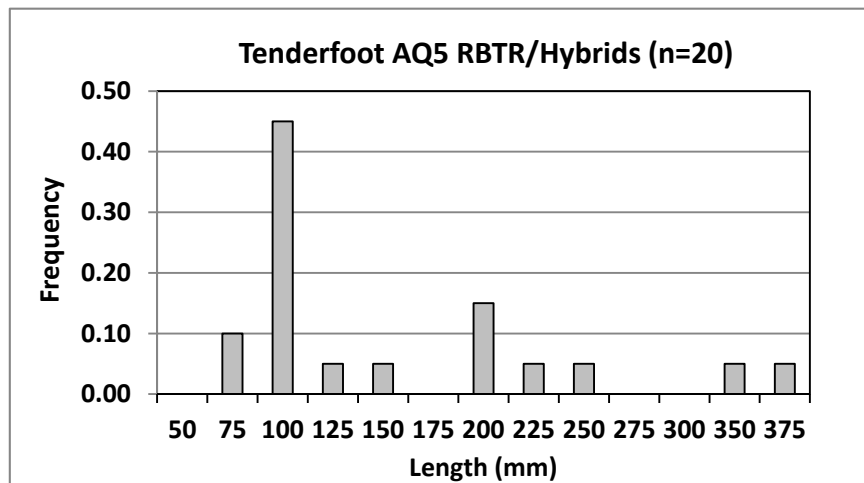
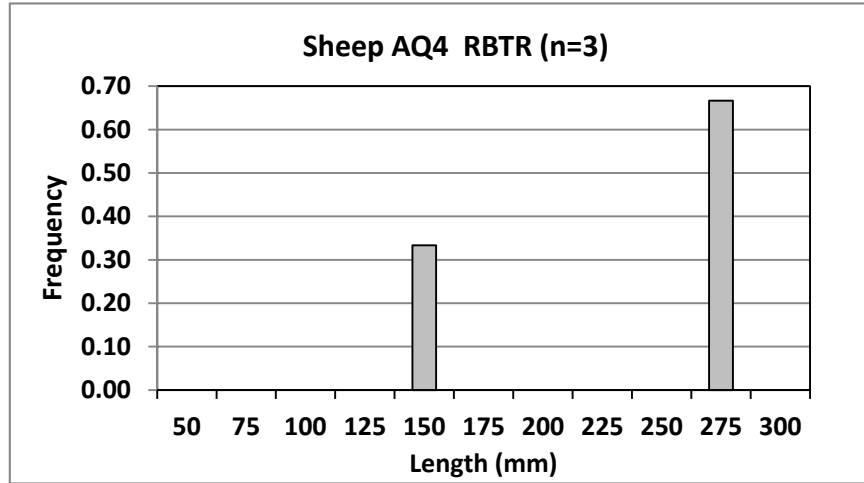
Size-frequency collection data for Brown Trout and Brook Trout collected during fall 2014 at the Tintina Black Butte Mine Sites



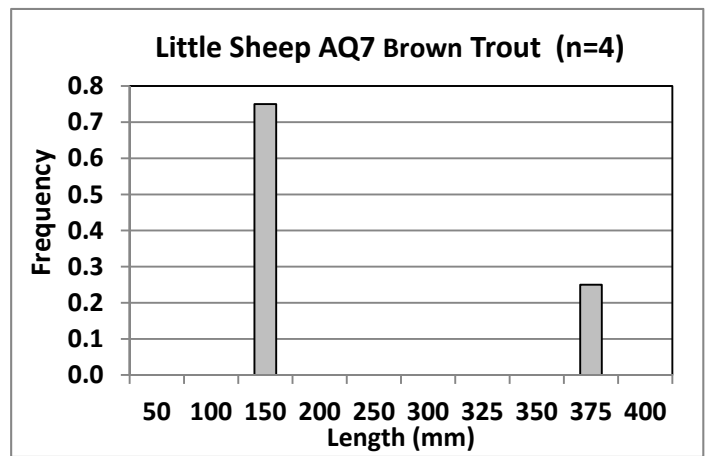
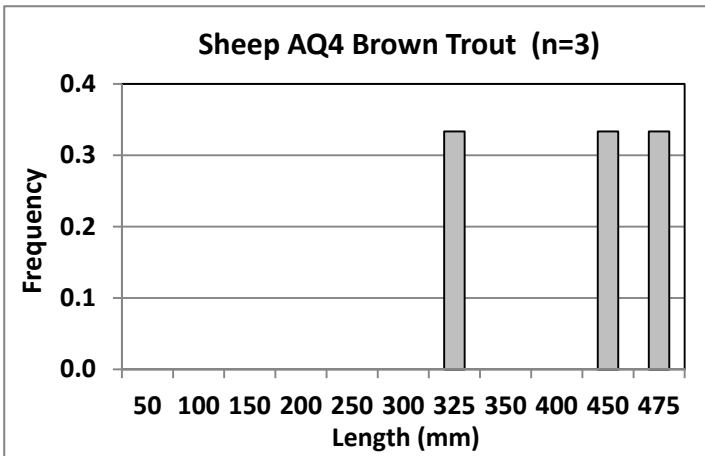
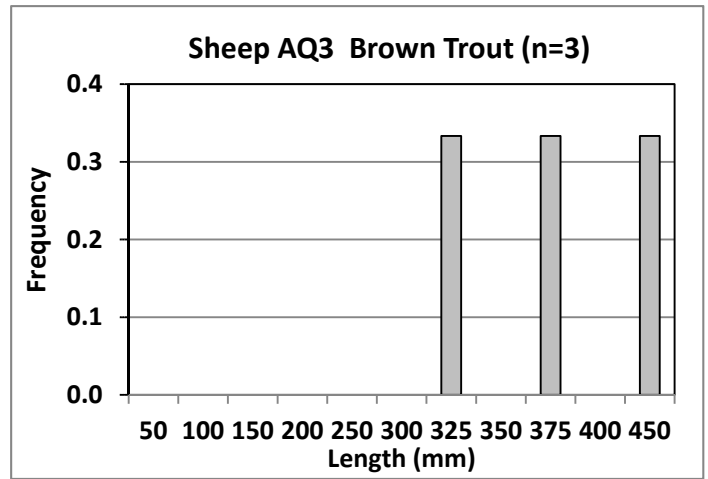
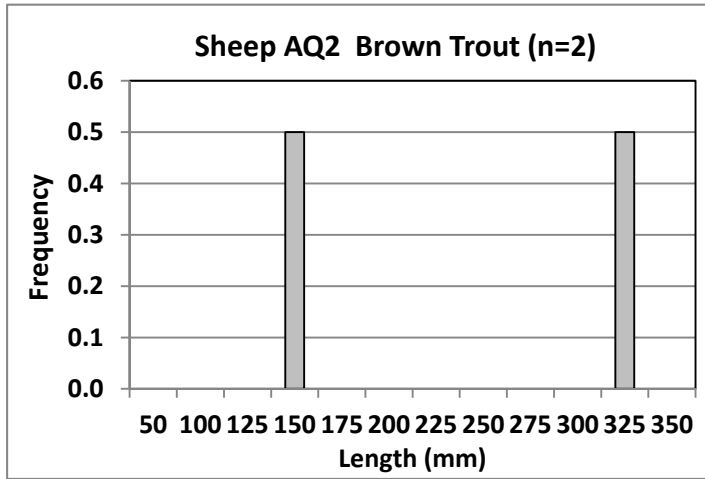
Size frequency collection data for Rainbow Trout collected during summer 2015 at the Tintina
Black Butte Mine Sites



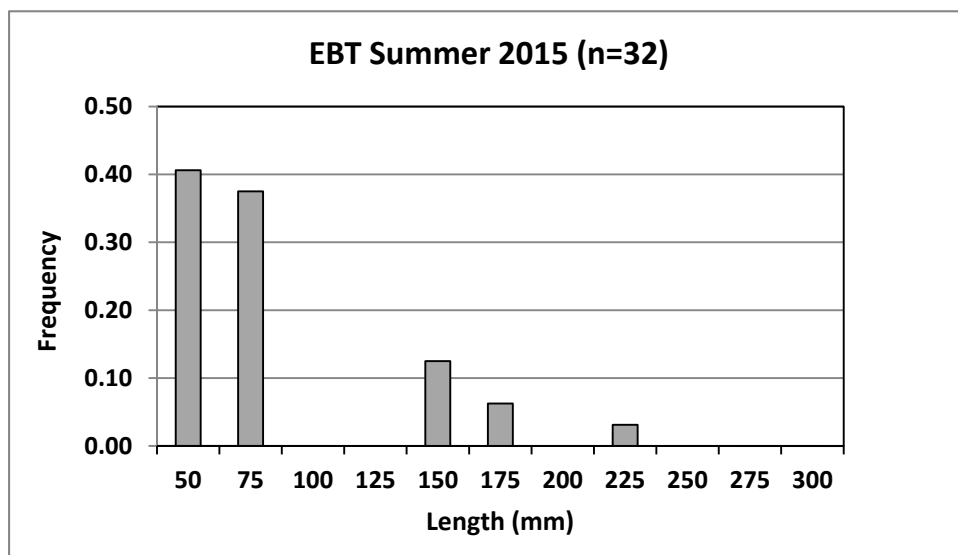
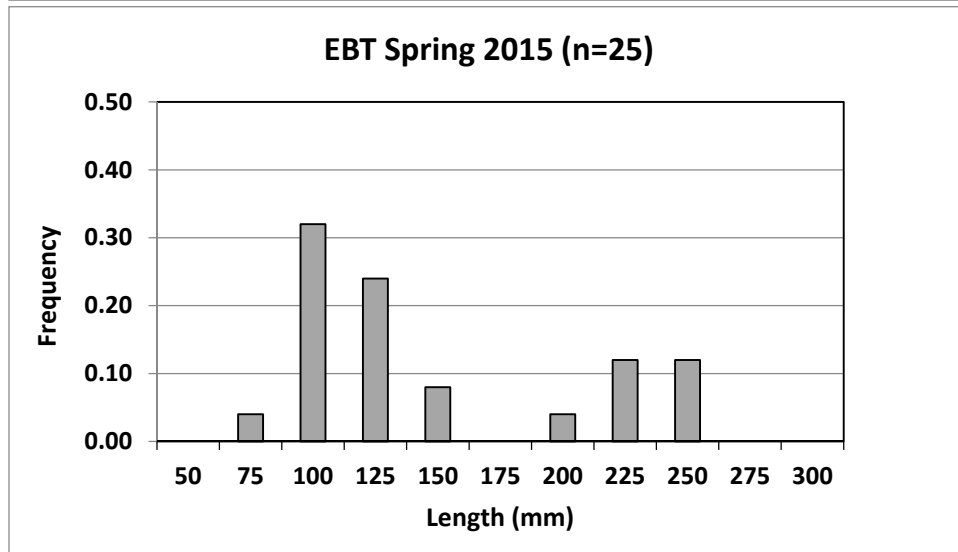
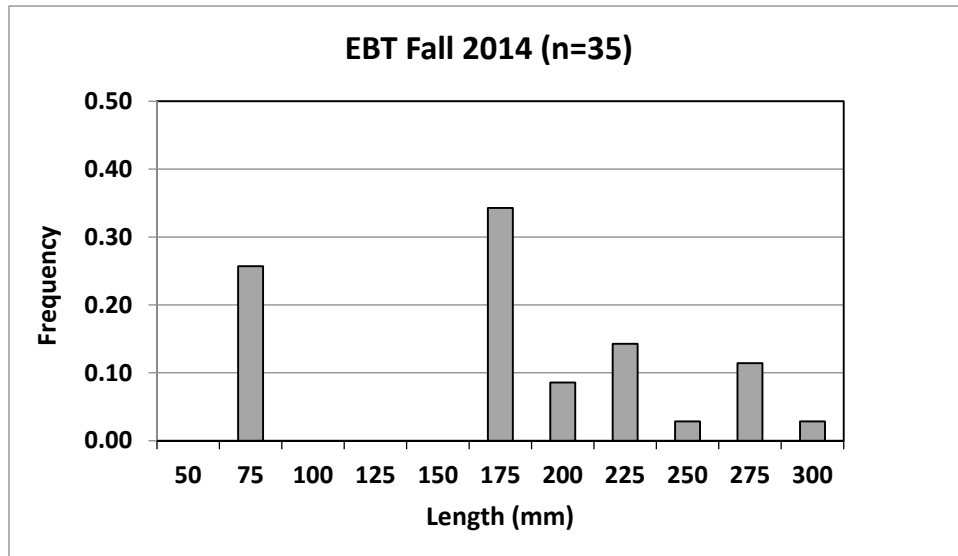
Size frequency collection data for Rainbow Trout and "Cutt-bows" collected during summer 2015
at the Tintina Black Butte Mine Sites



Size frequency collection data for Brown Trout collected during summer 2015 at the Tintina Black Butte Mine Sites



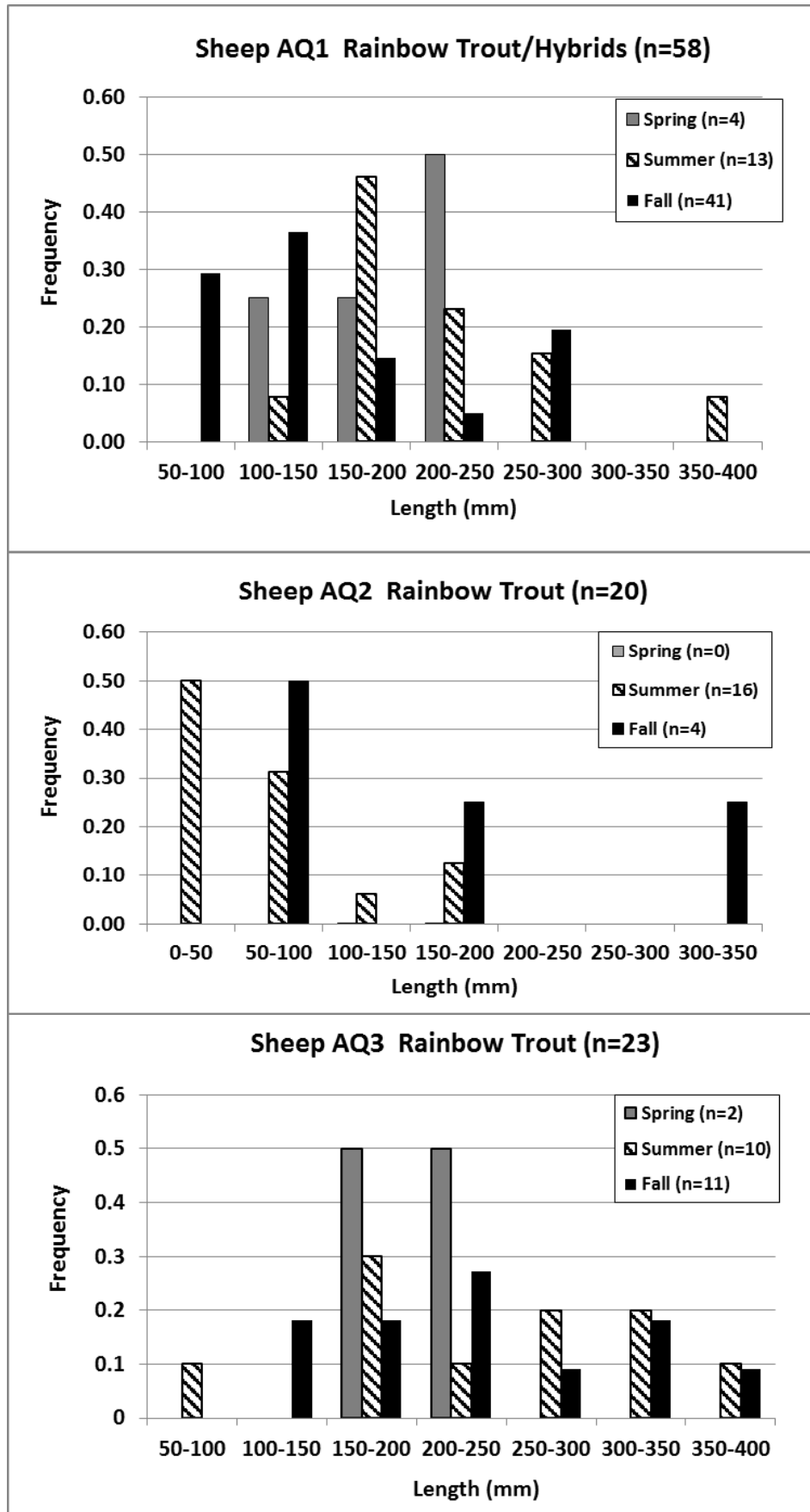
Little Sheep Creek seasonal Brook trout (EBT) size-frequency graphs



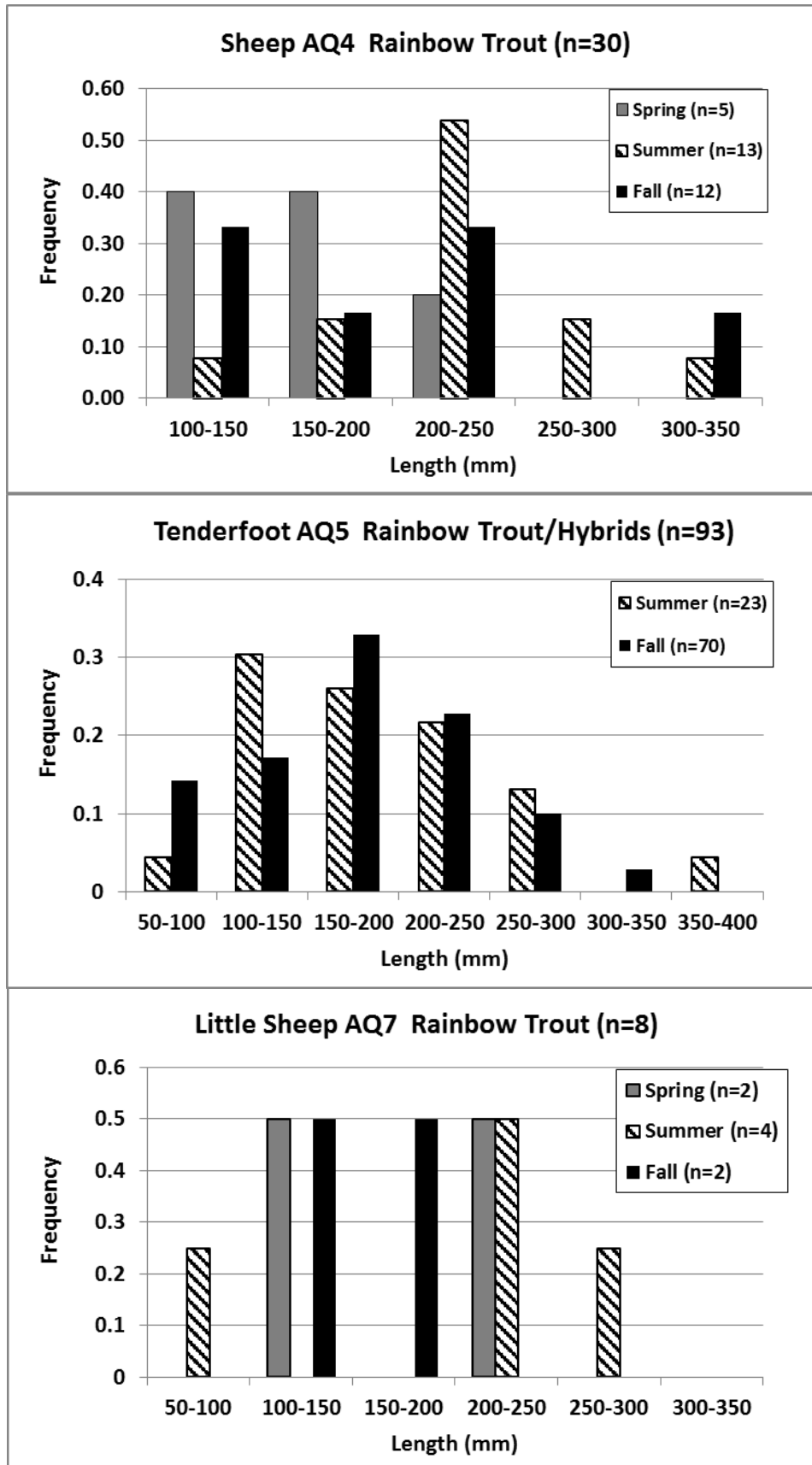
Pages extracted from:

Stagliano, D. 2017a. 2016 Baseline Aquatic Surveys and Assessment of Streams in the Tintina Black Butte Copper Project Area of Meagher County, MT. May 2017. Tintina Resources Inc. White Sulphur Springs, Montana.

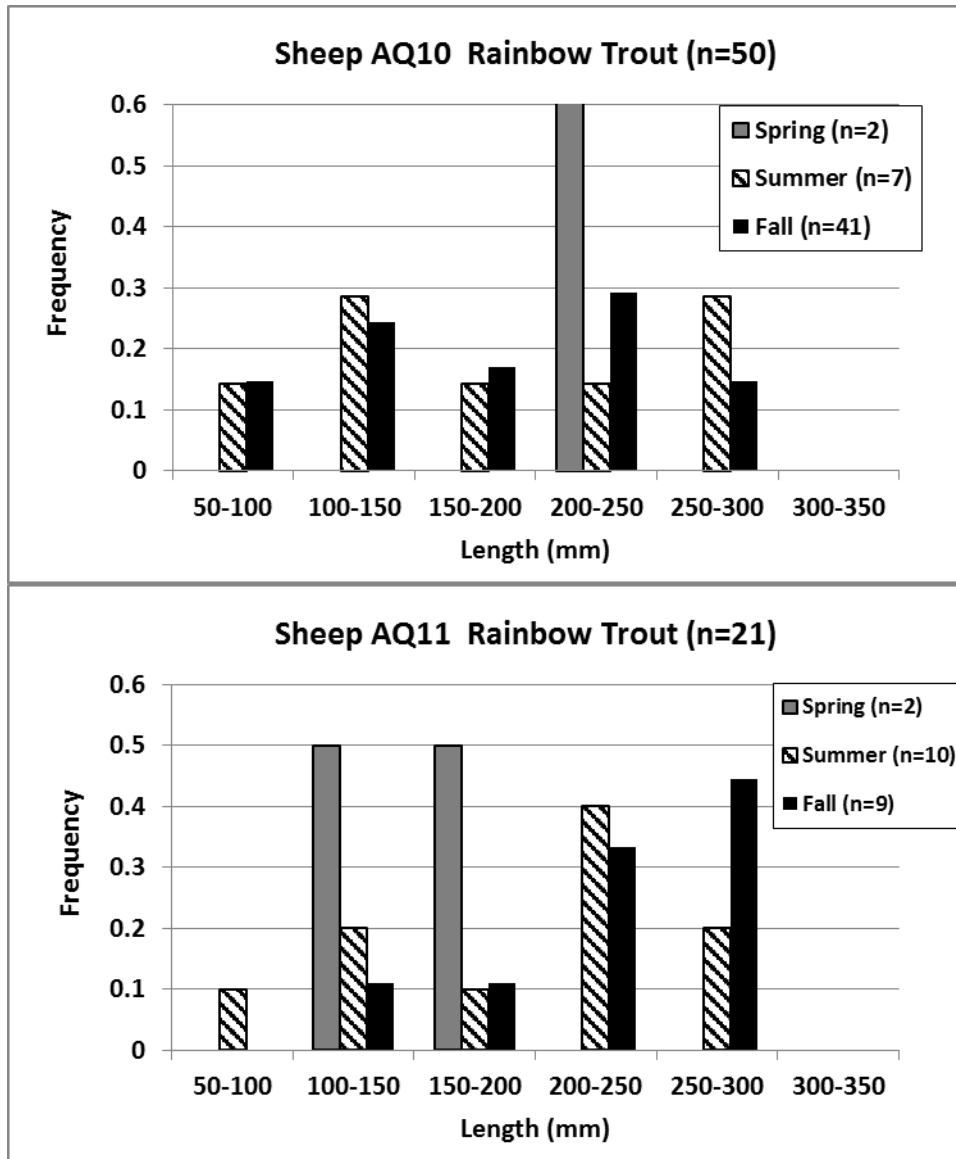
Appendix C. Sheep Creek seasonal Rainbow trout (RBTR) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



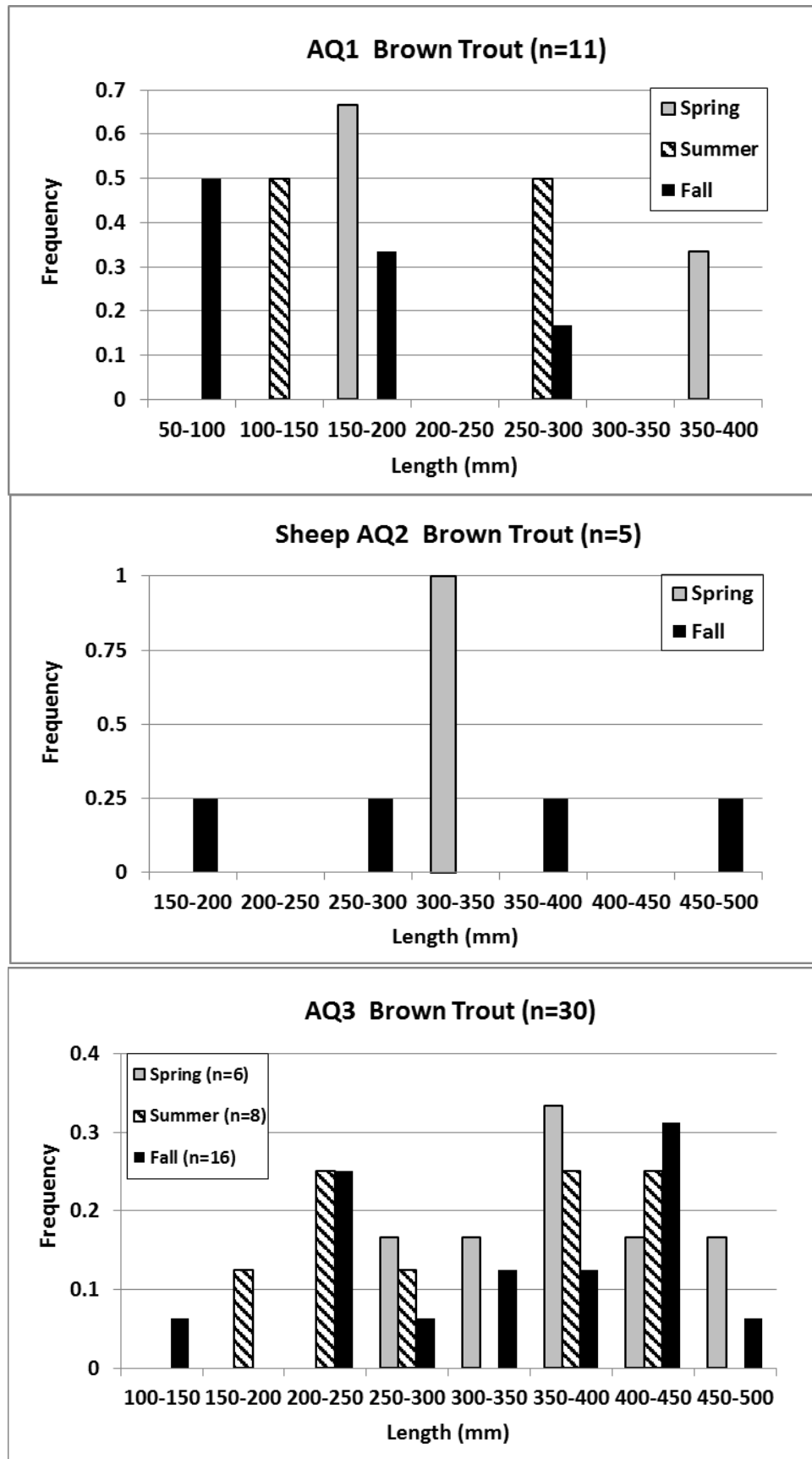
Appendix C. Sheep Creek seasonal rainbow trout (RBTR) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



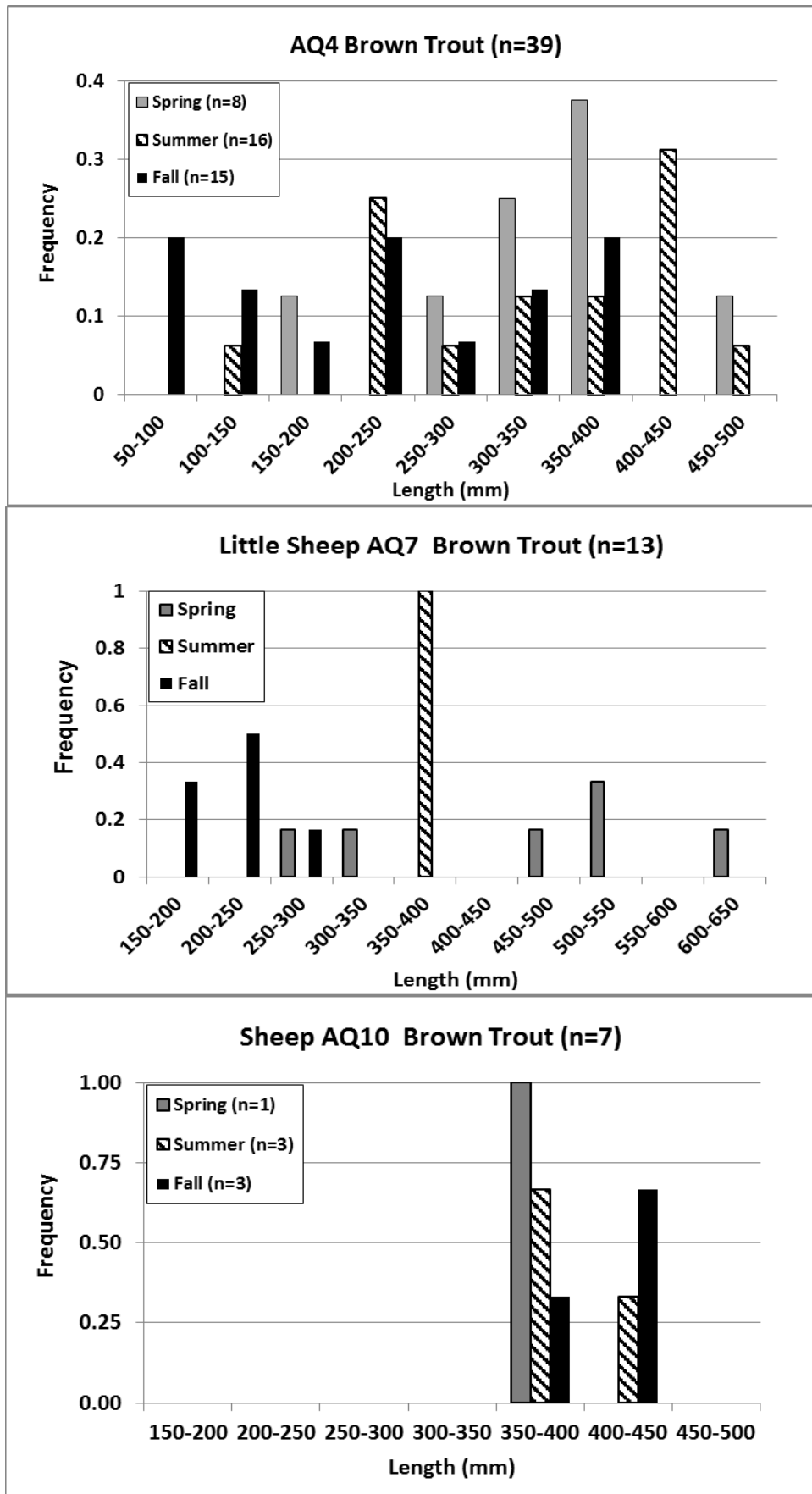
Appendix C. Sheep Creek seasonal rainbow trout (RBTR) size-frequency graphs for 2016.
Catchable size is considered >200mm (8 inches).



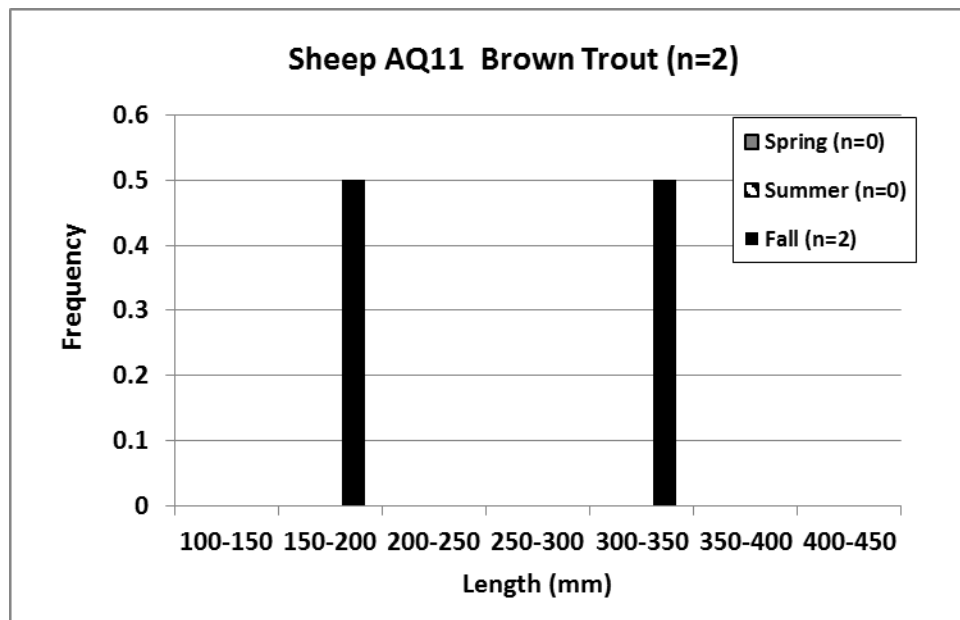
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



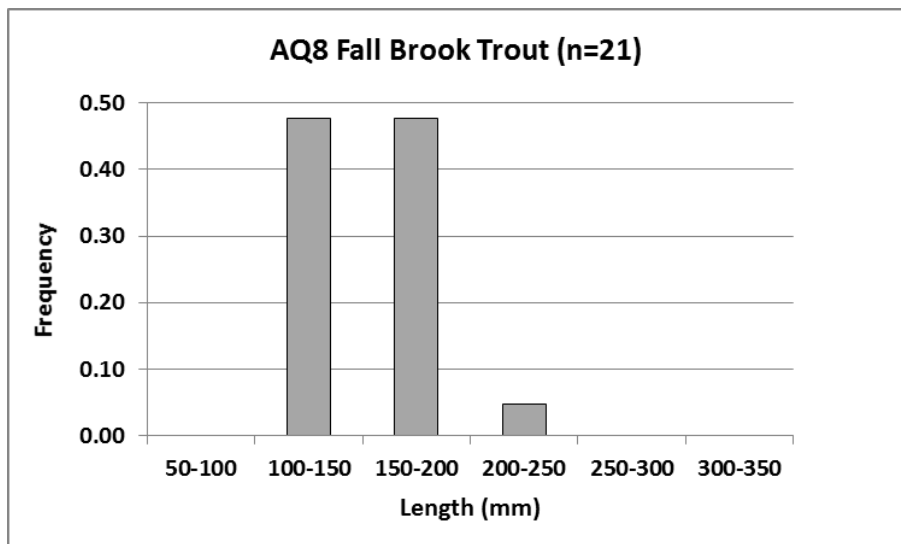
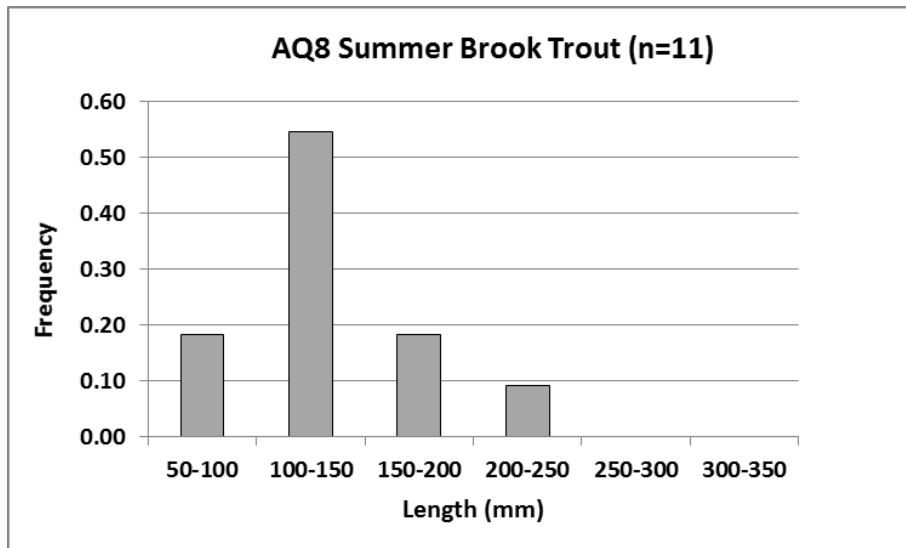
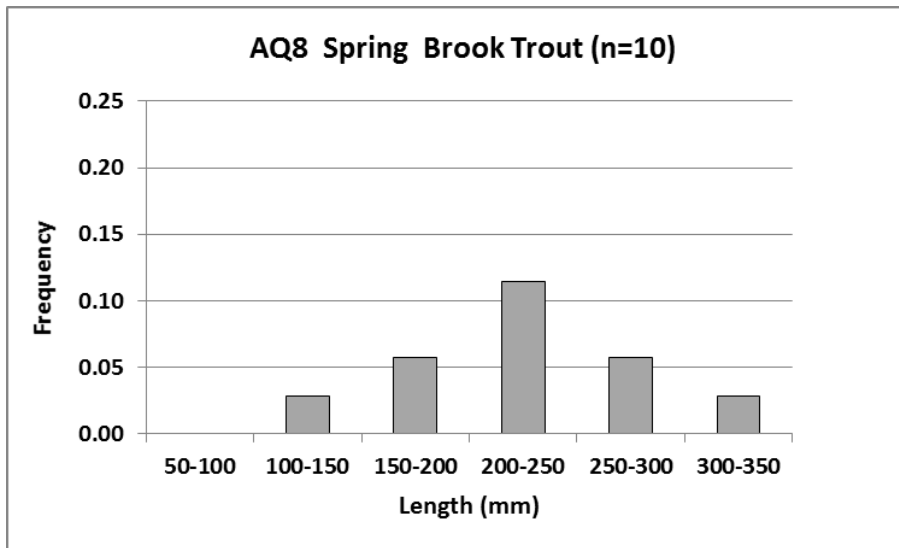
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches)



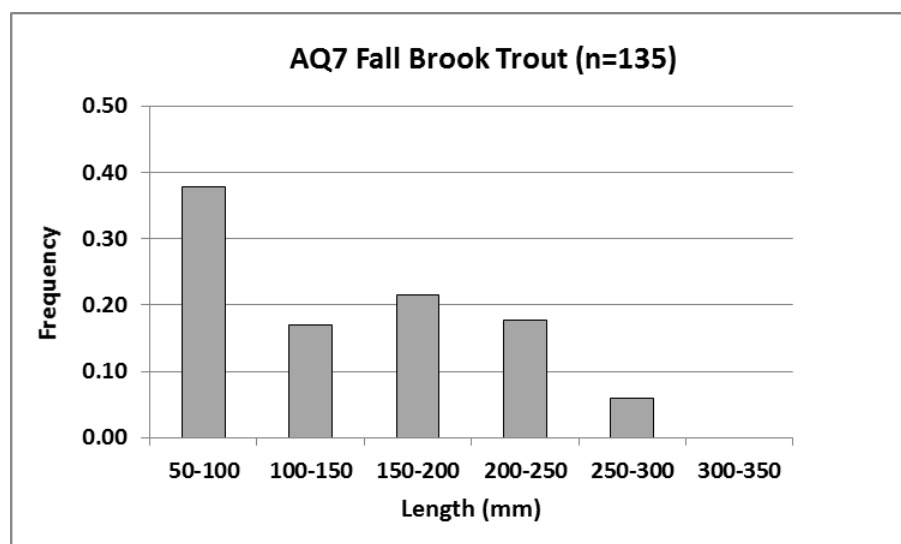
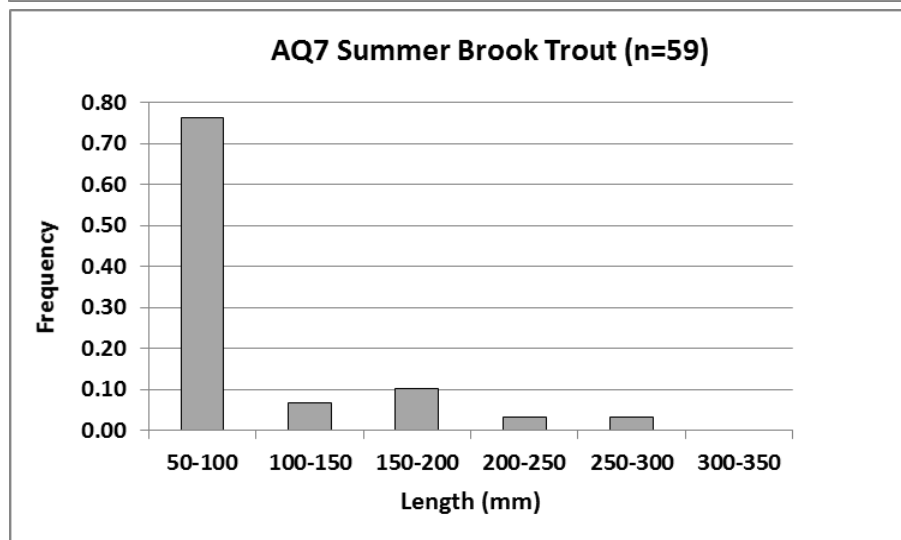
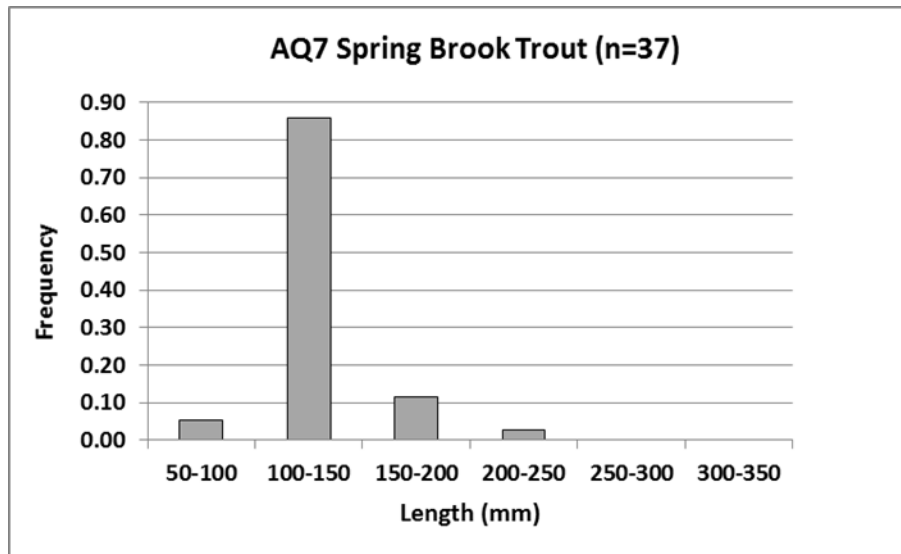
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
Catchable size is considered >200mm (8 inches)



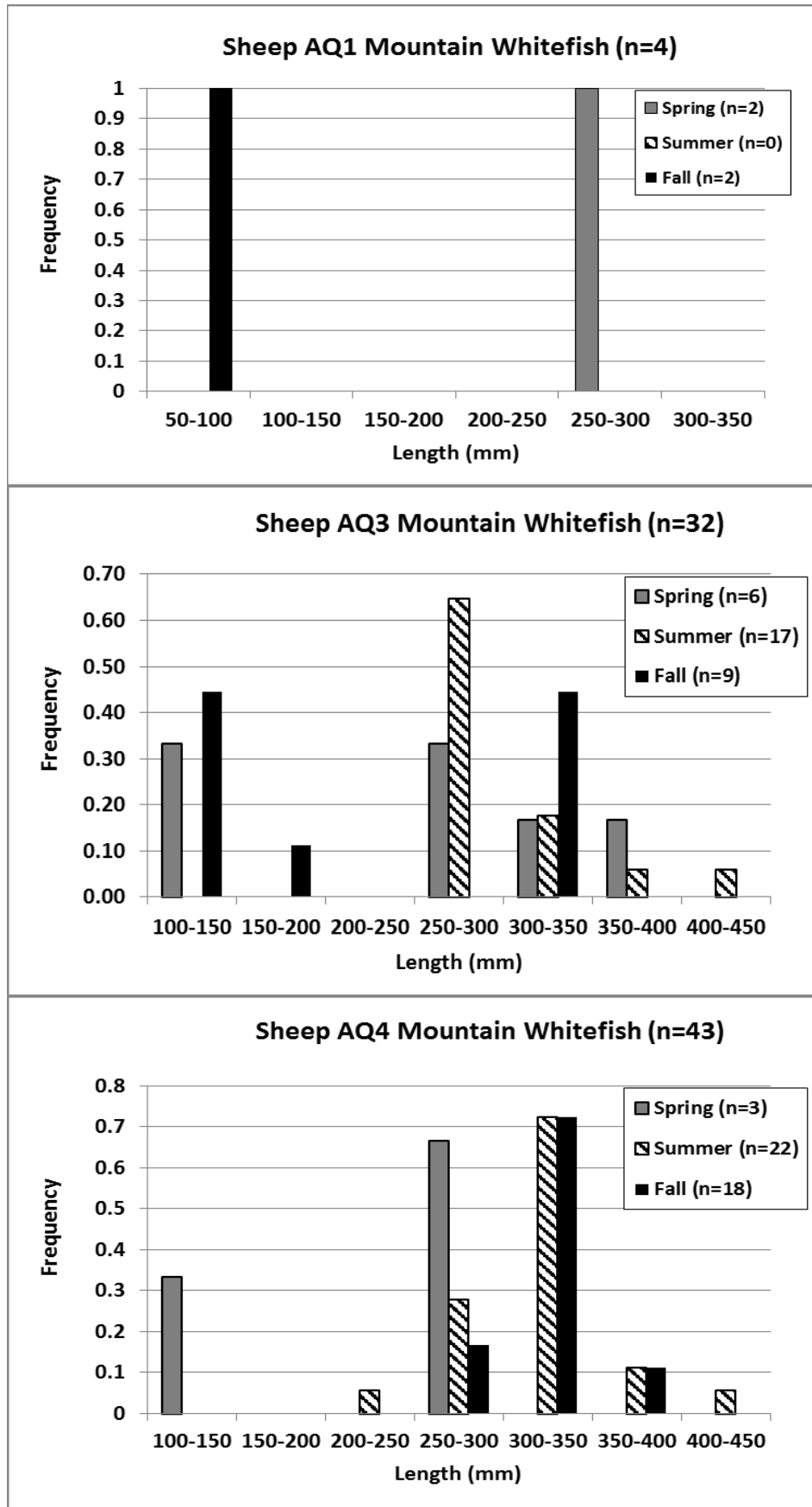
Appendix C. Little Sheep Creek seasonal Brook trout (EBT) size-frequency graphs for 2016



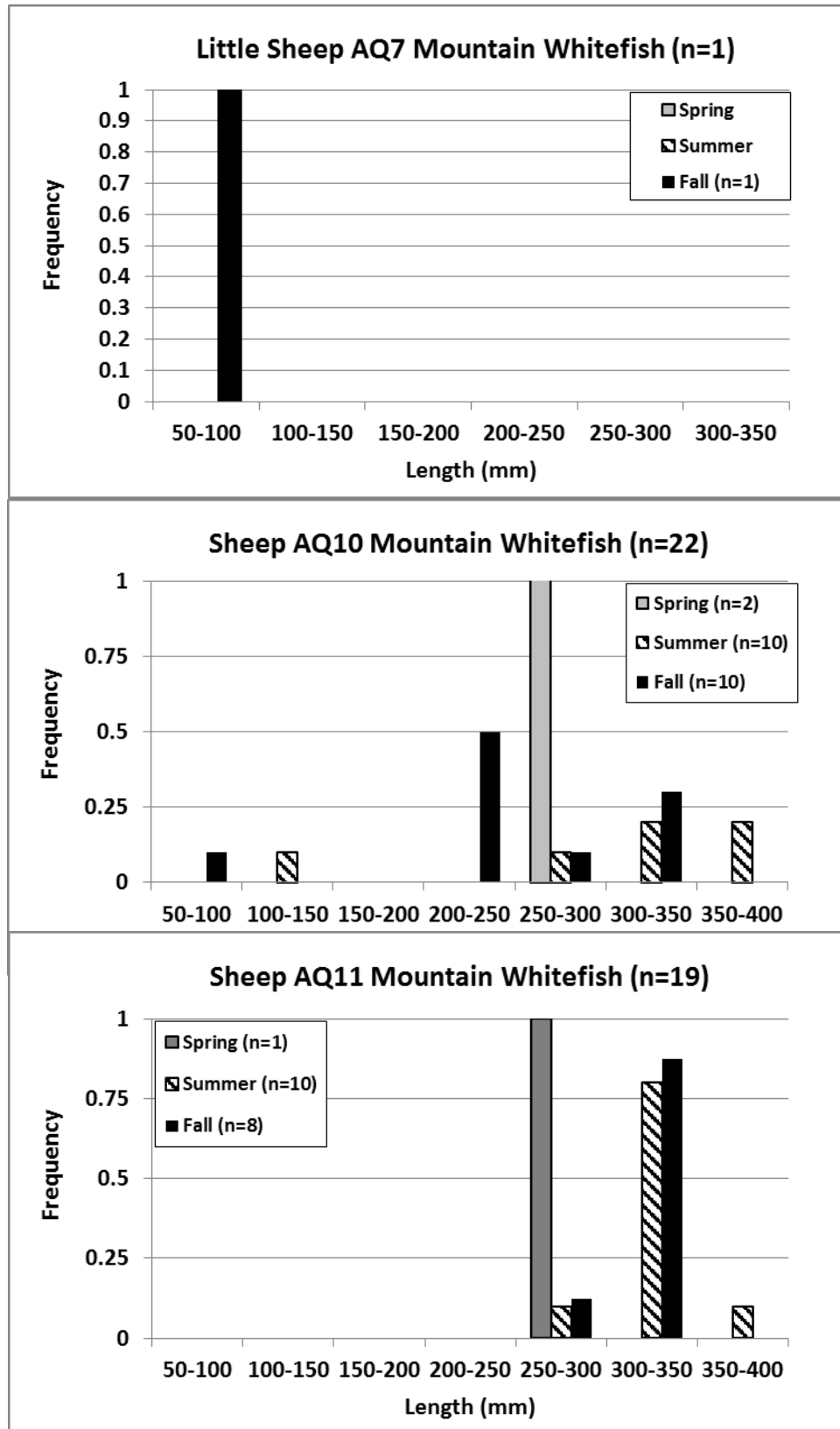
Appendix C. Little Sheep Creek seasonal Brook trout (EBT) size-frequency graphs for 2016



Appendix C. Sheep Creek seasonal Mountain Whitefish (MOWH) size-frequency graphs for 2016. Catchable size is considered >200mm (8 inches).



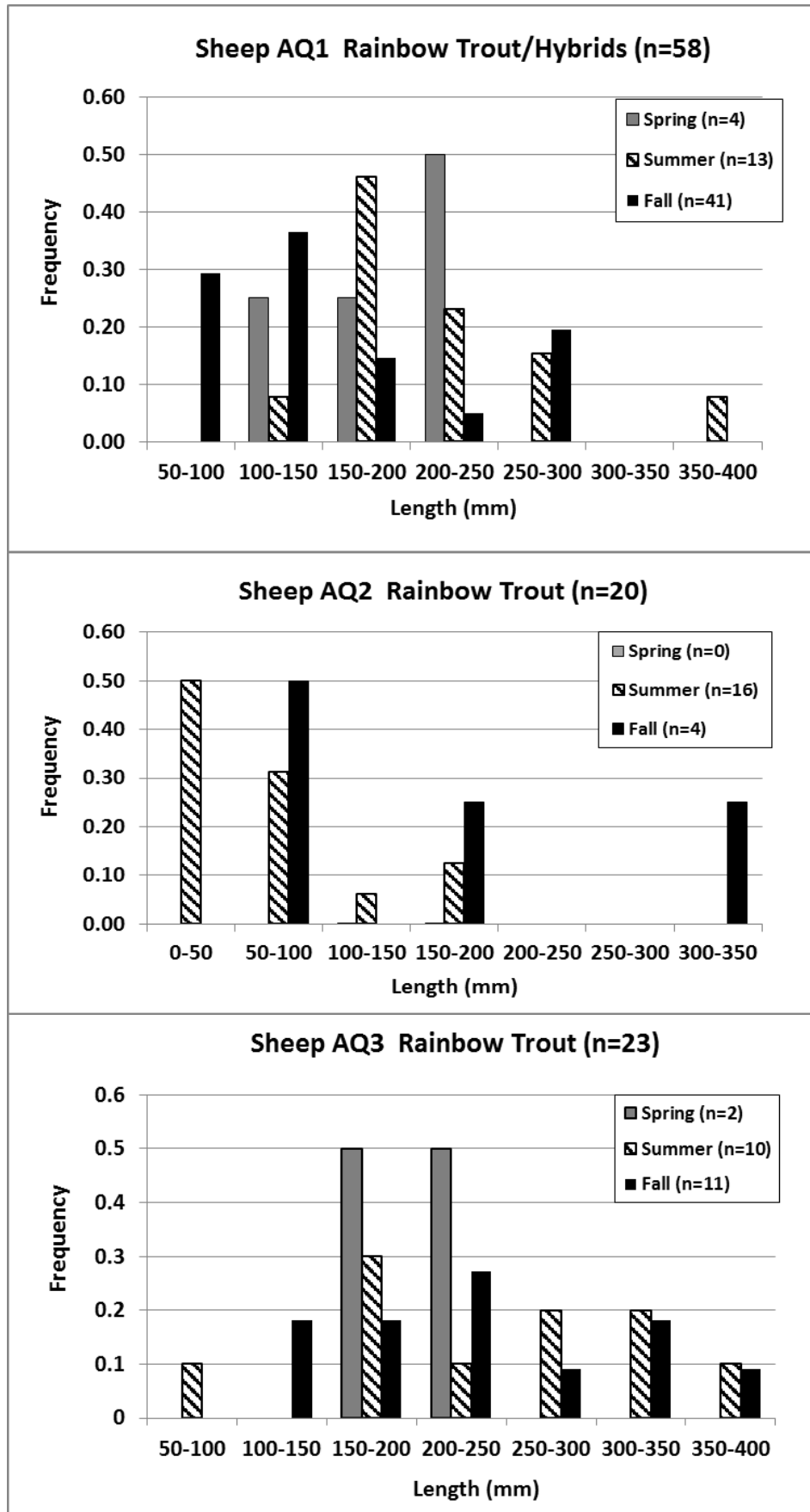
Appendix C. Sheep Creek seasonal Mountain Whitefish (MOWH) size-frequency graphs for 2016. Catchable size is considered >200mm (8 inches)



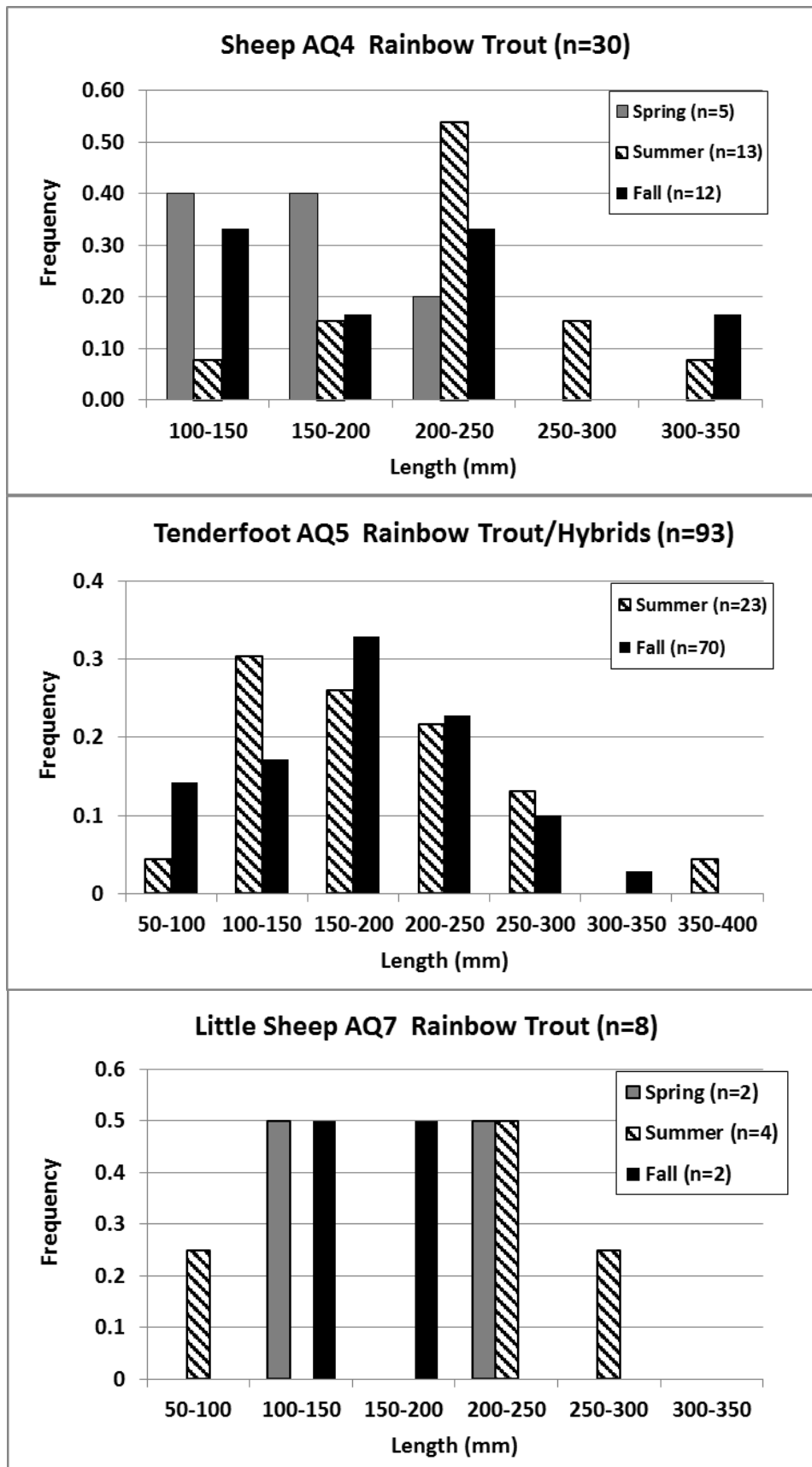
Pages extracted from:

Stagliano, D. 2017b. Draft: Baseline Aquatic Surveys and Assessment Summary 2014–2017 of Streams in the Tintina Black Butte Copper Project Area of Meagher County, MT. Tintina Resources Inc. White Sulphur Springs, Montana.

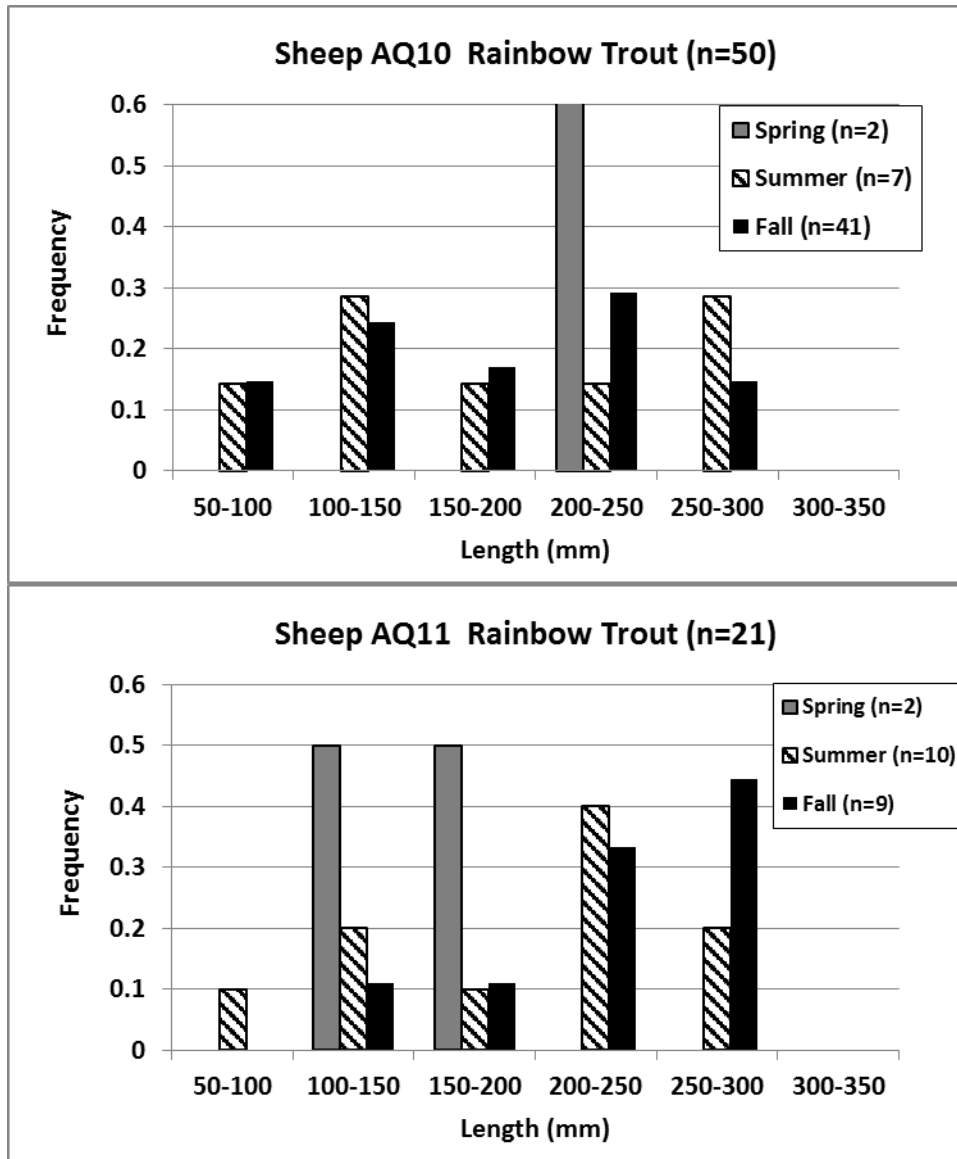
Appendix C. Sheep Creek seasonal Rainbow trout (RBTR) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



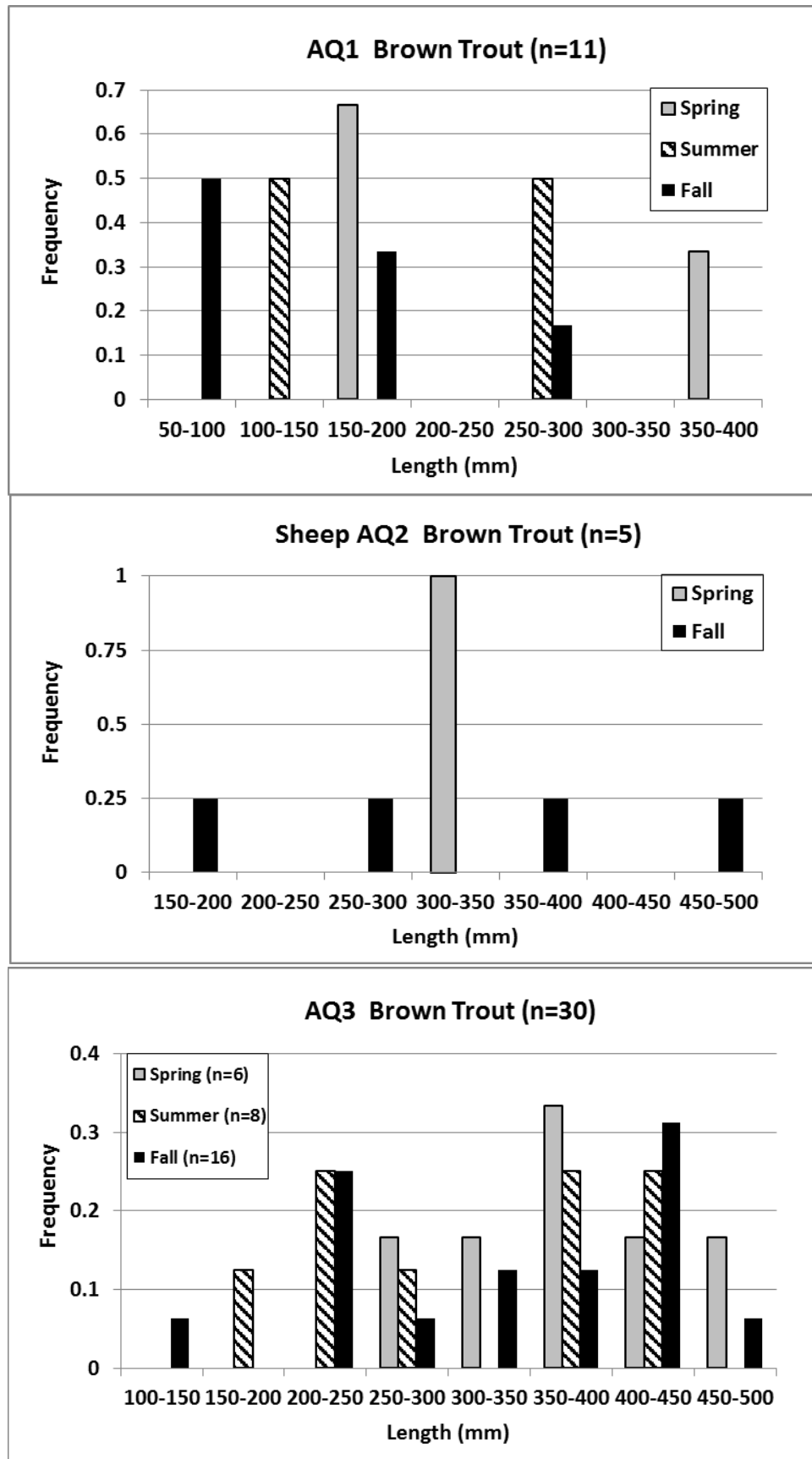
Appendix C. Sheep Creek seasonal rainbow trout (RBTR) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



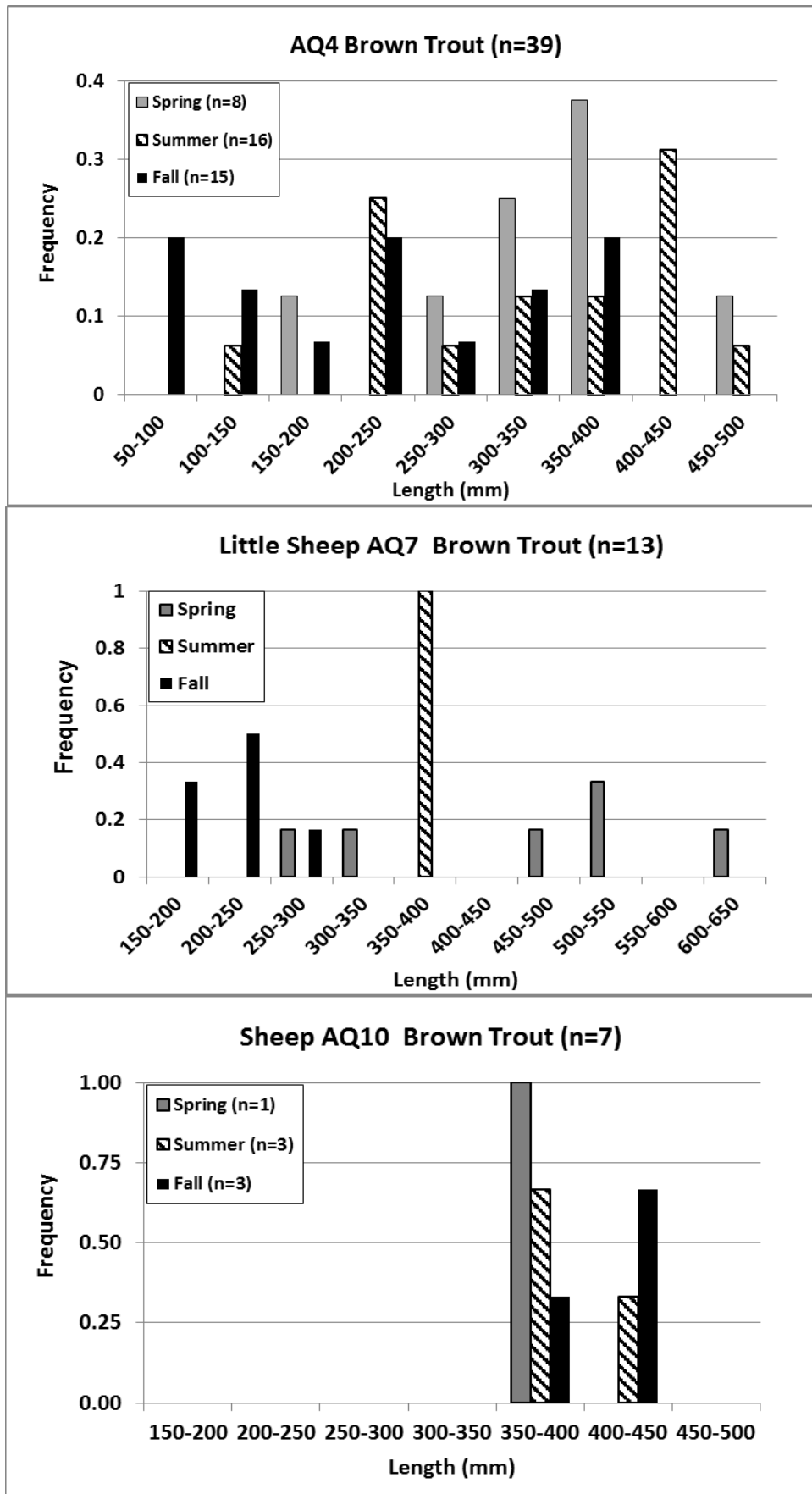
Appendix C. Sheep Creek seasonal rainbow trout (RBTR) size-frequency graphs for 2016.
Catchable size is considered >200mm (8 inches).



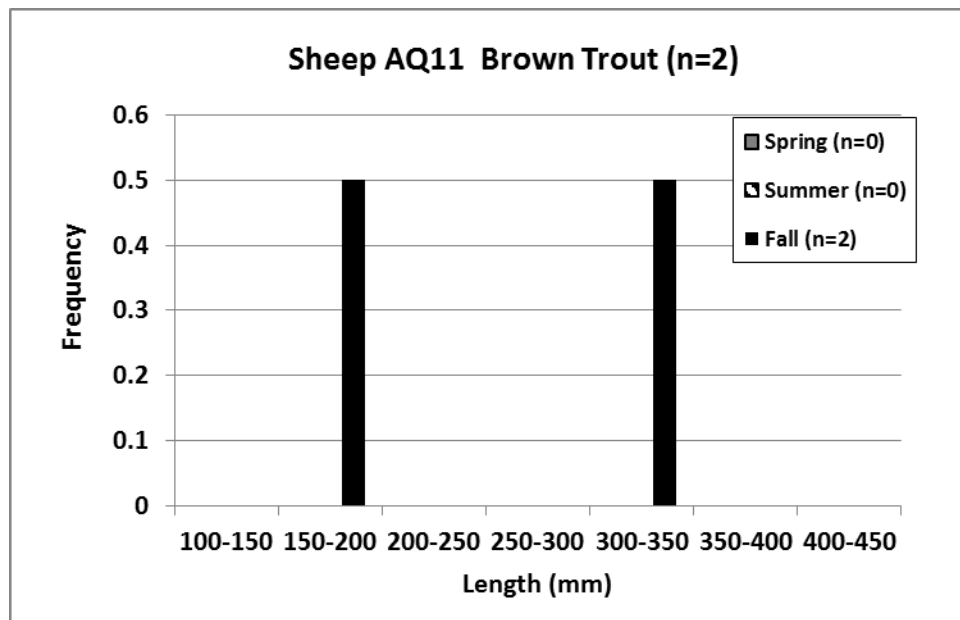
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



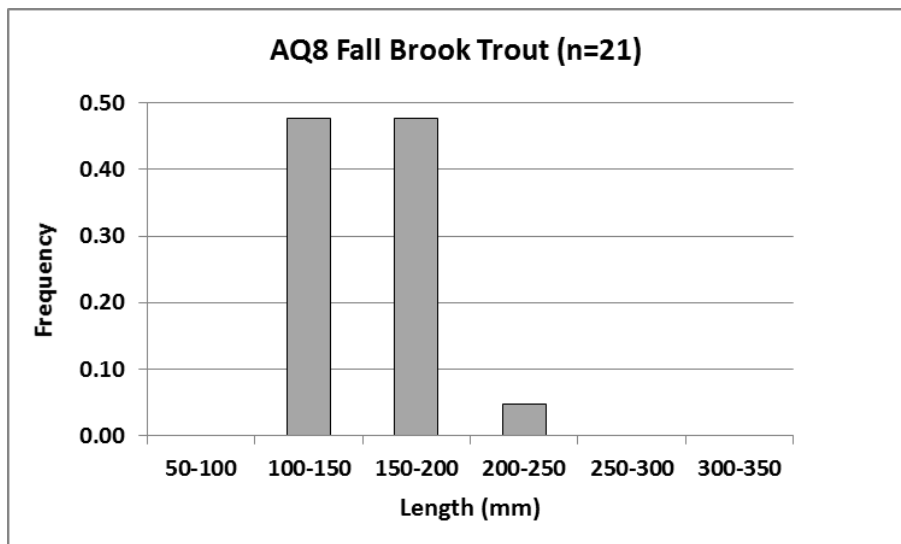
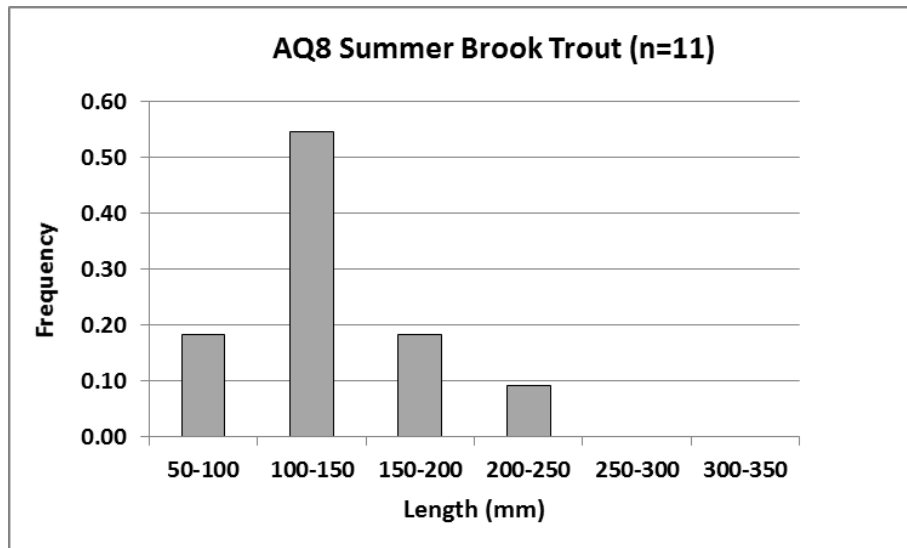
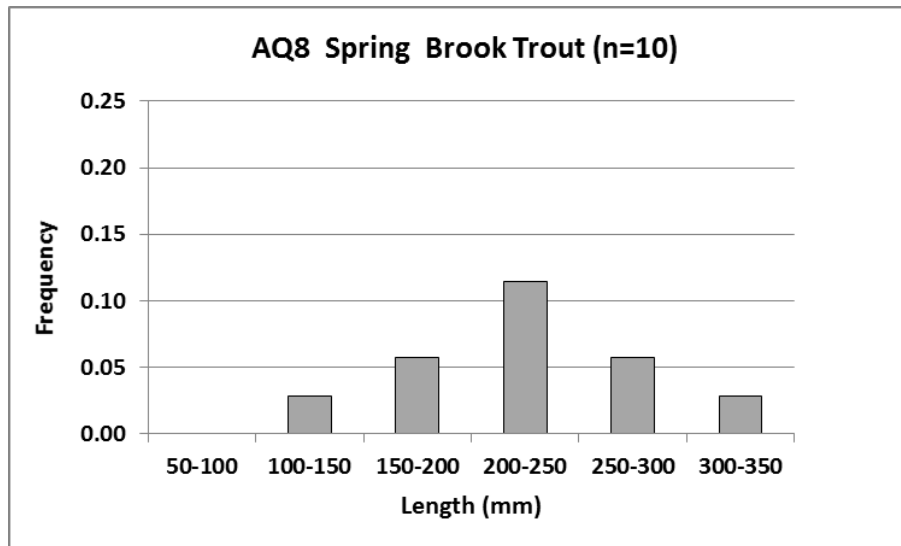
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches)



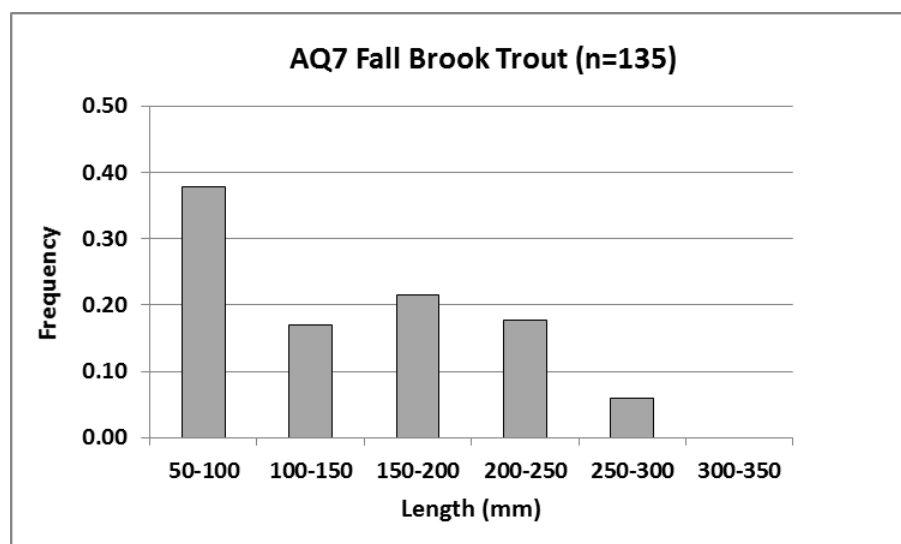
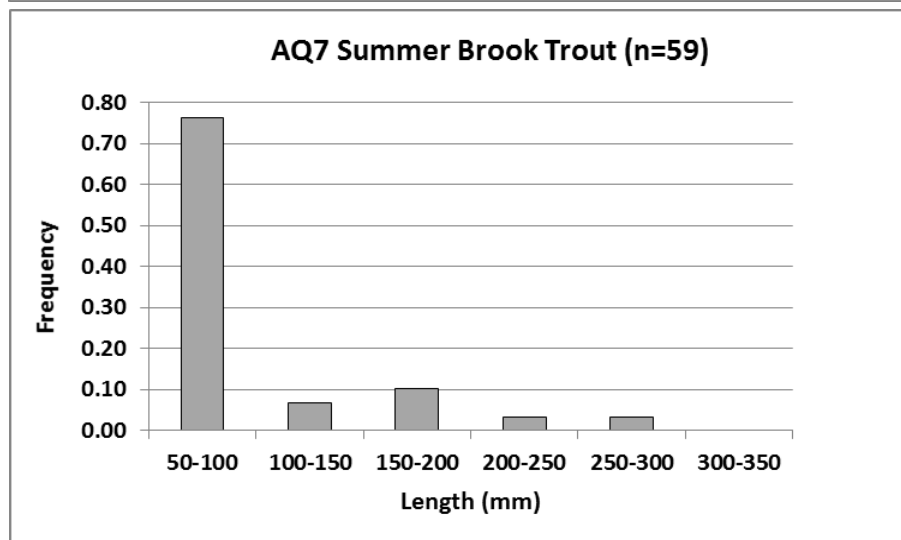
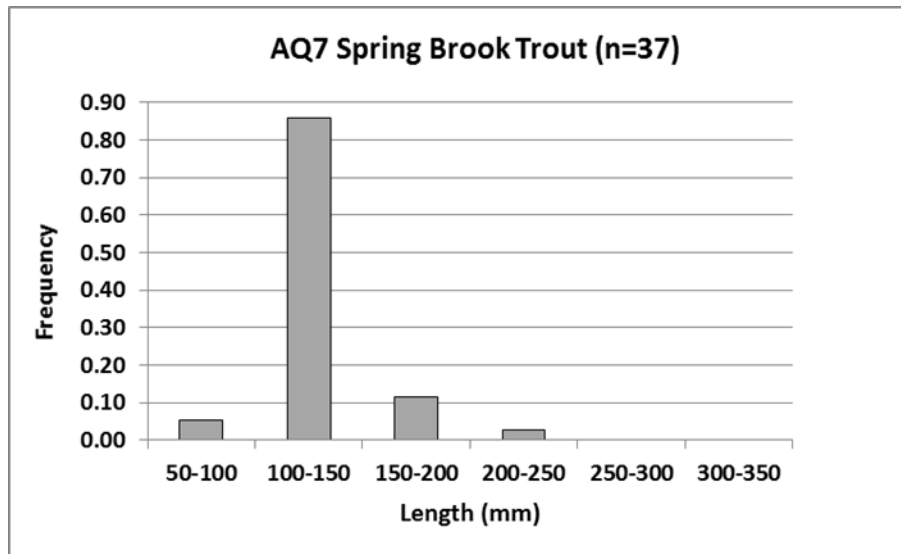
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
Catchable size is considered >200mm (8 inches)



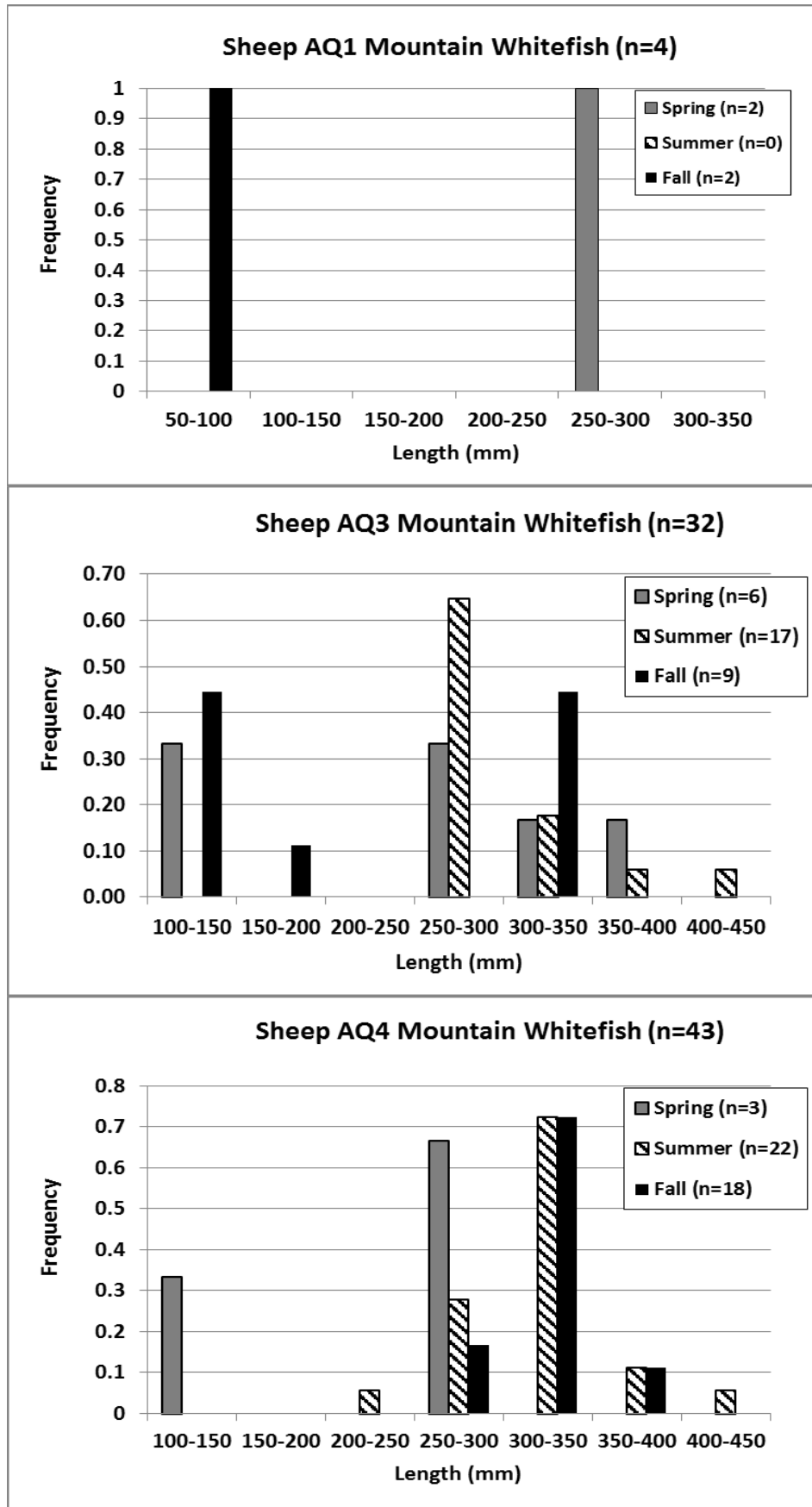
Appendix C. Little Sheep Creek seasonal Brook trout (EBT) size-frequency graphs for 2016



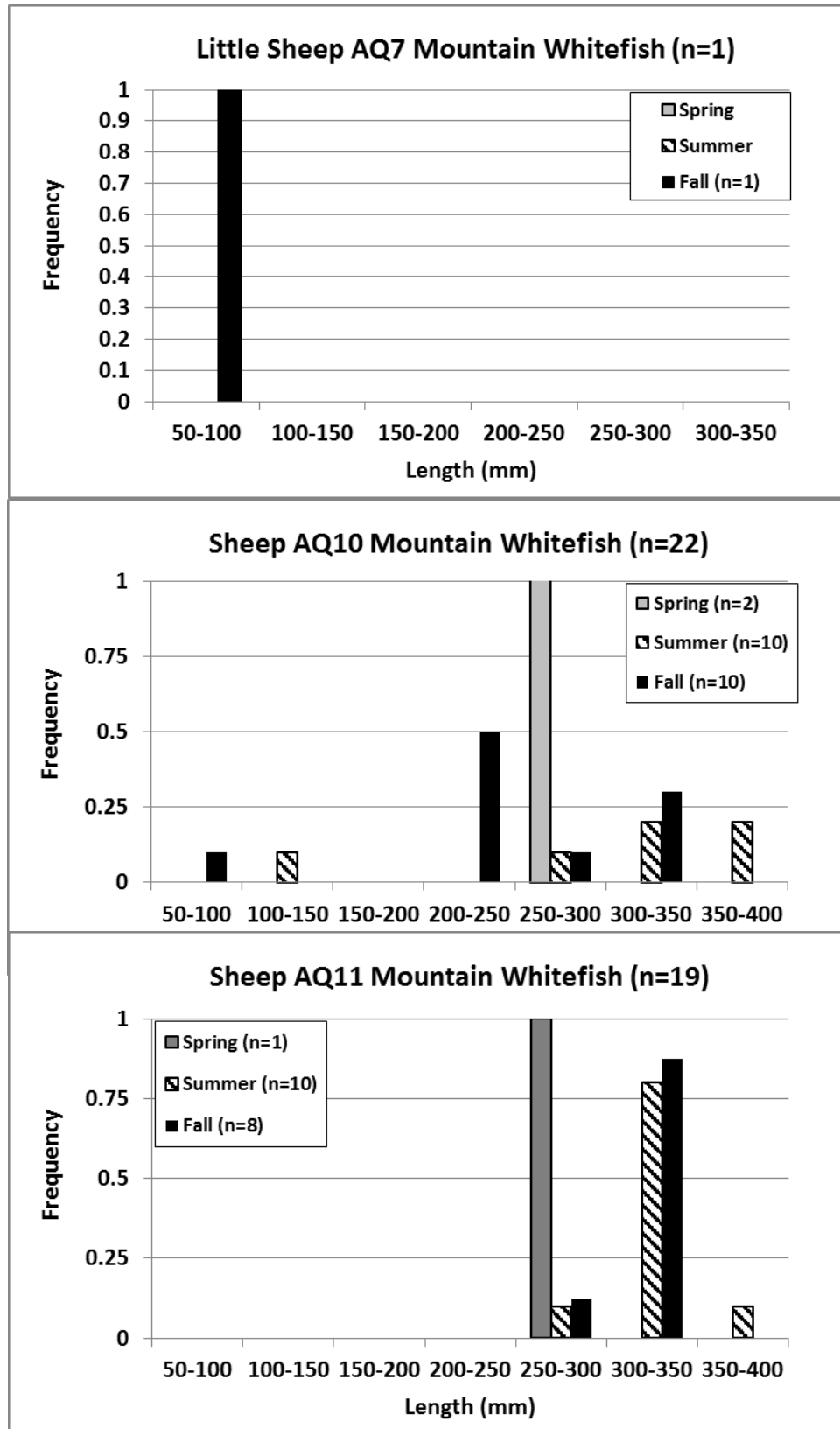
Appendix C. Little Sheep Creek seasonal Brook trout (EBT) size-frequency graphs for 2016



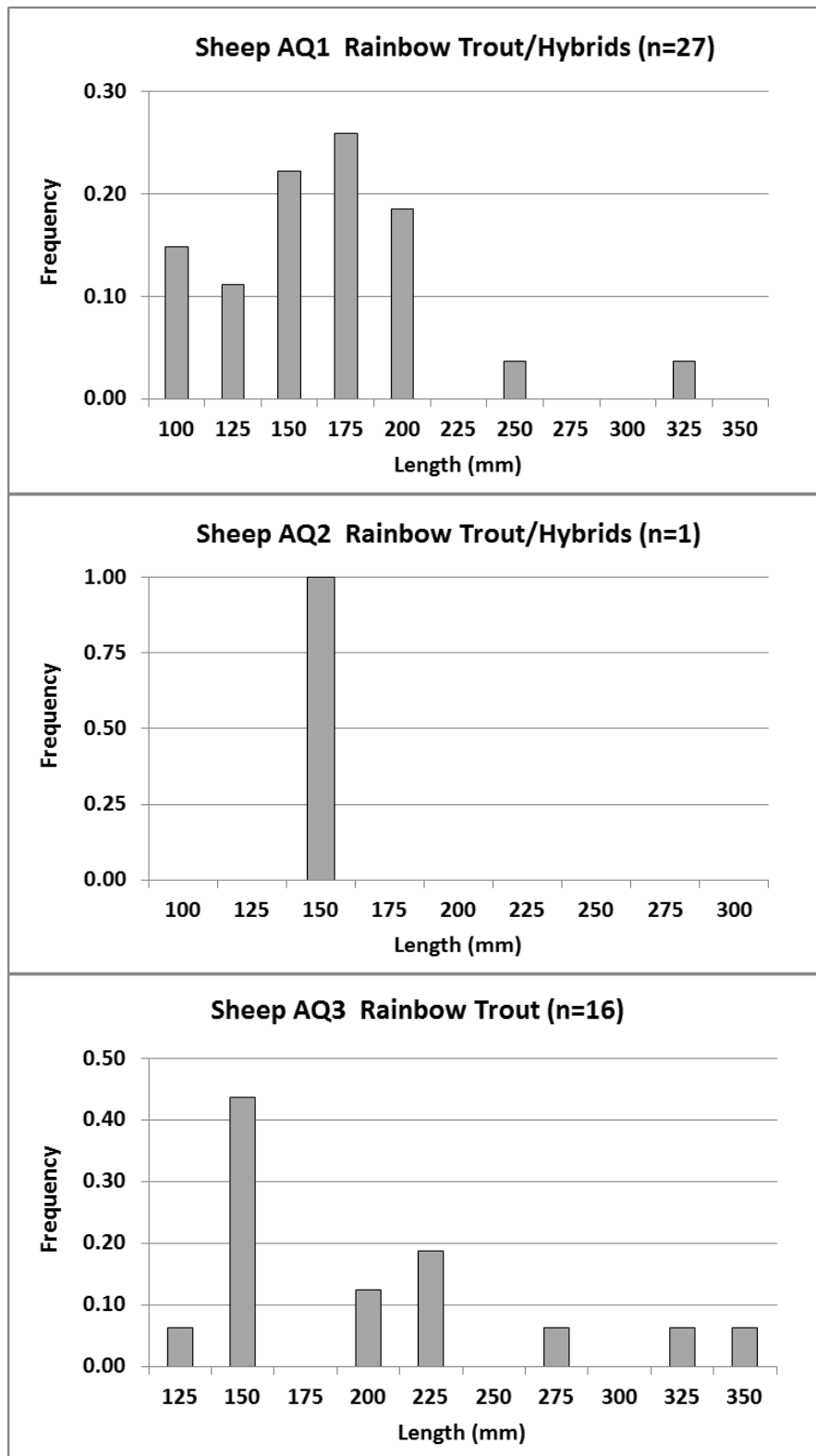
Appendix C. Sheep Creek seasonal Mountain Whitefish (MOWH) size-frequency graphs for 2016. Catchable size is considered >200mm (8 inches).



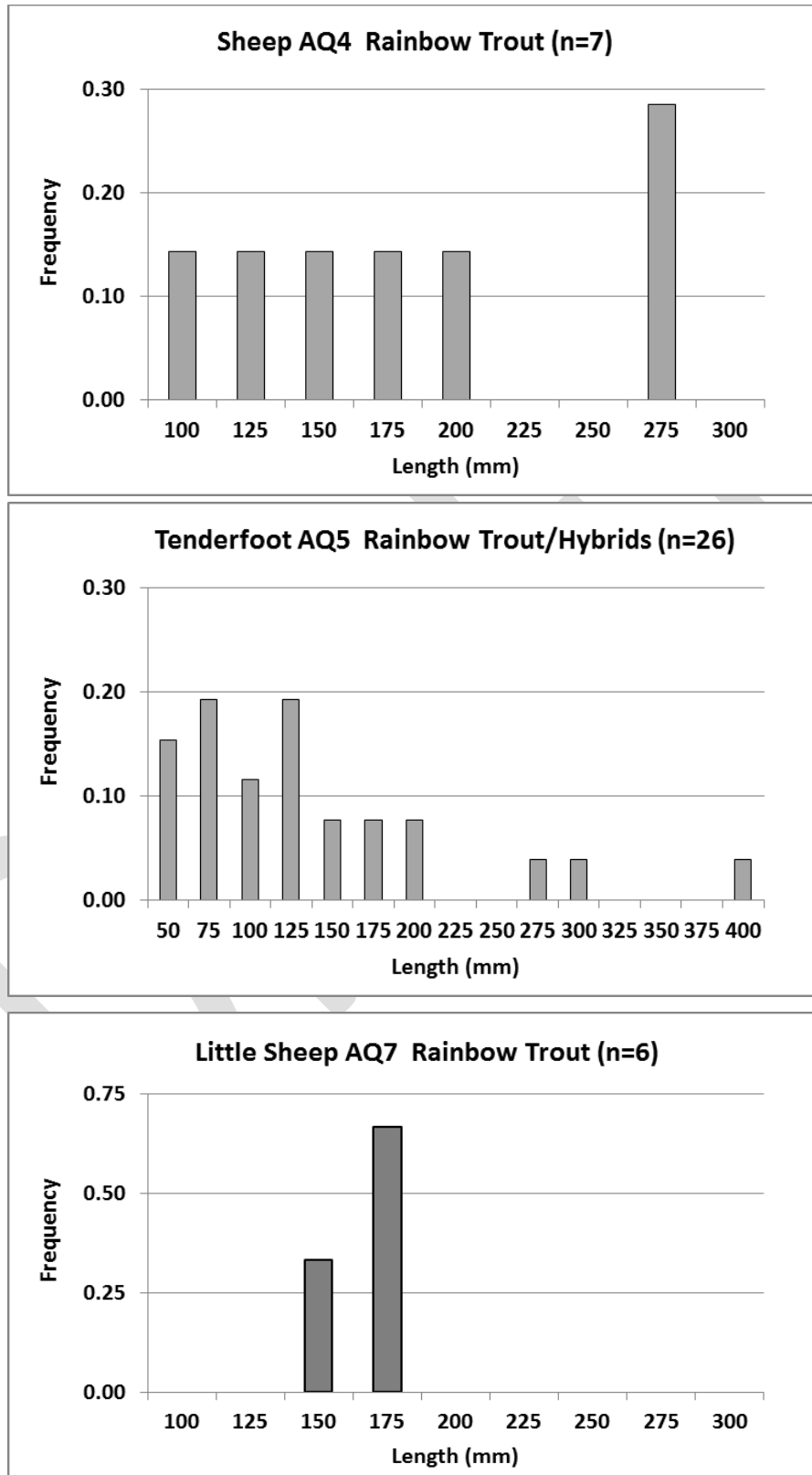
Appendix C. Sheep Creek seasonal Mountain Whitefish (MOWH) size-frequency graphs for 2016. Catchable size is considered >200mm (8 inches)



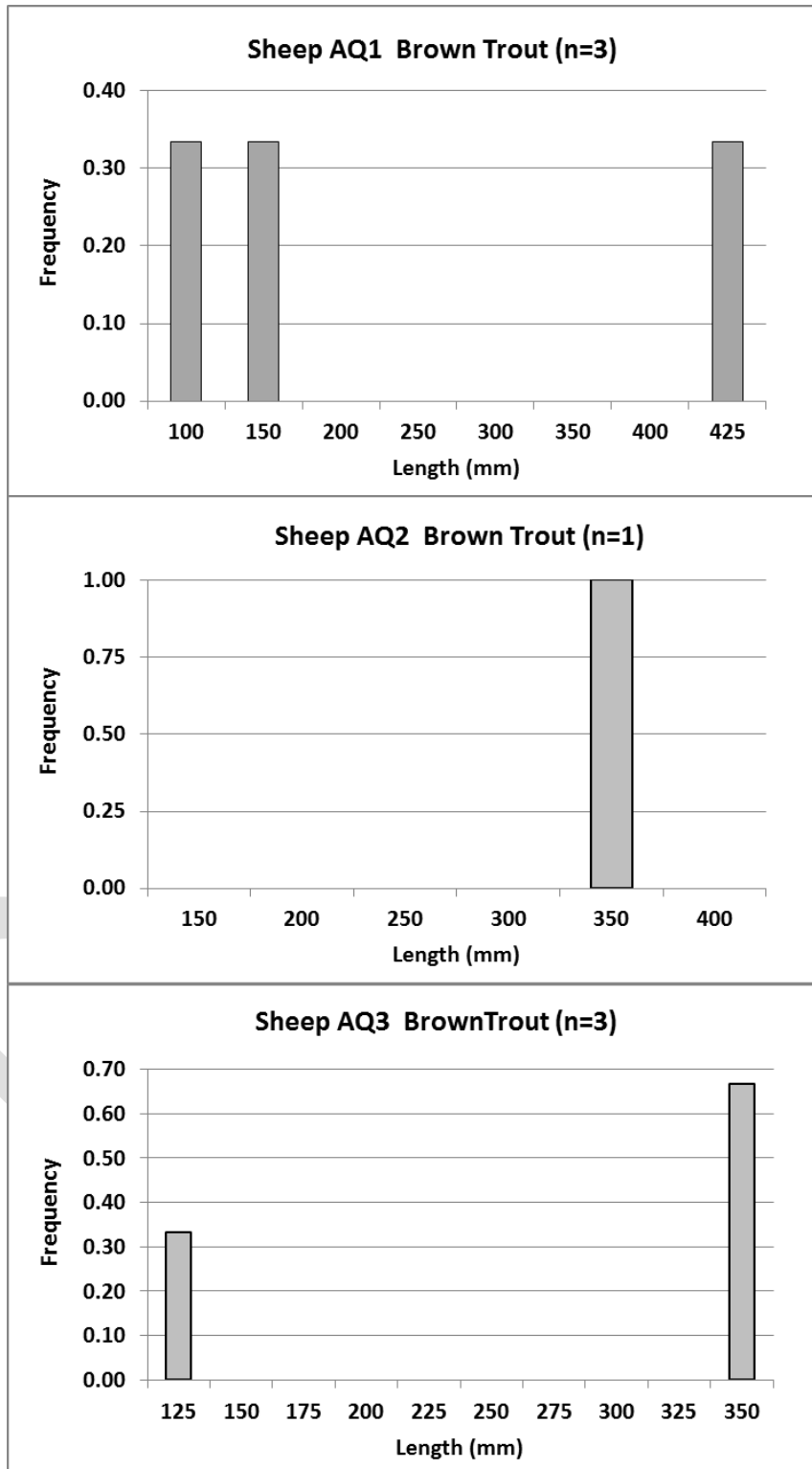
Size frequency collection data for Rainbow Trout and “Cutt-bows” collected at the Tintina Black Butte Mine Sites.



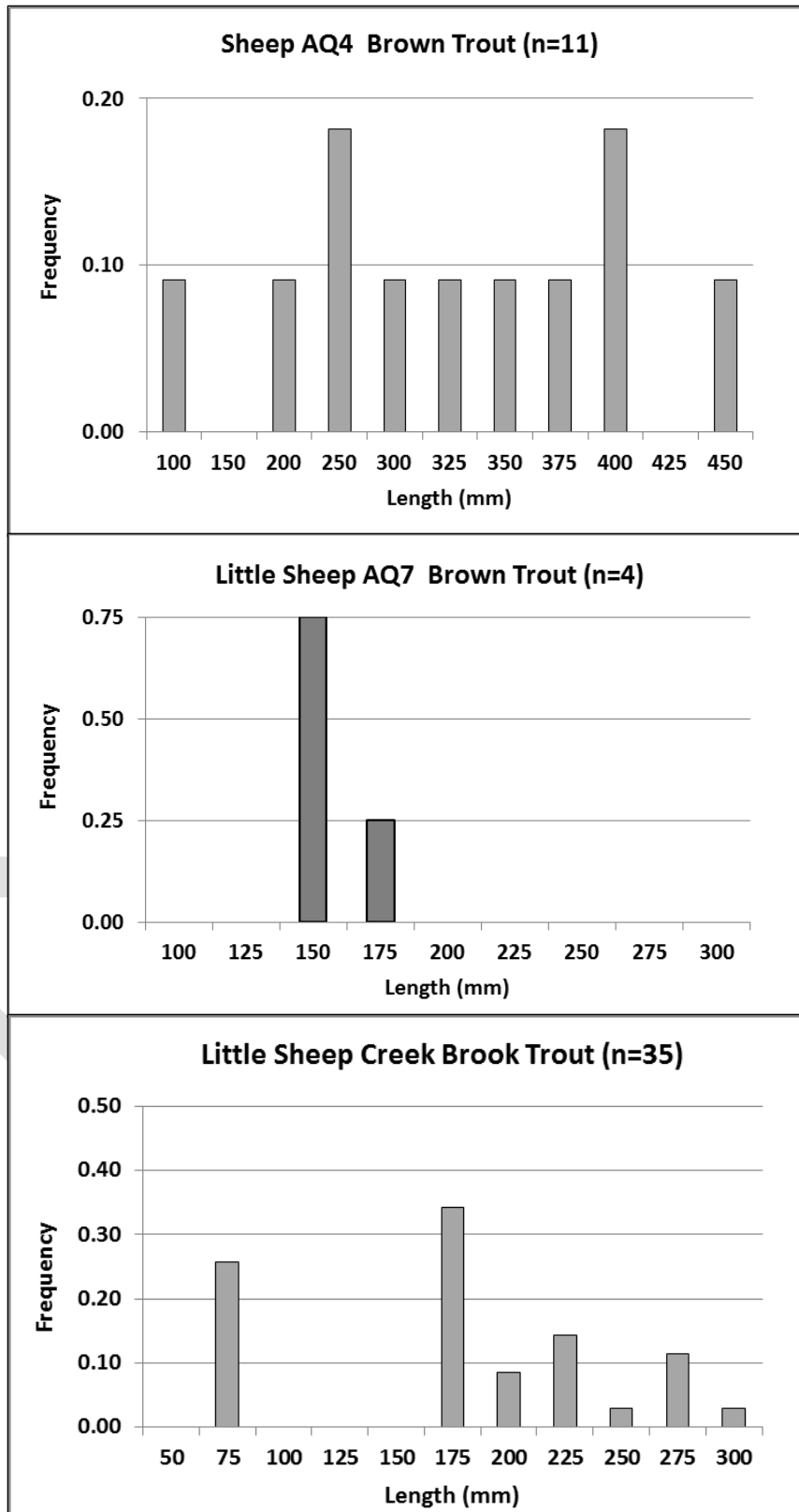
Size frequency collection data for Rainbow Trout and “Cutt-bows” collected at the Tintina Black Butte Mine Sites.



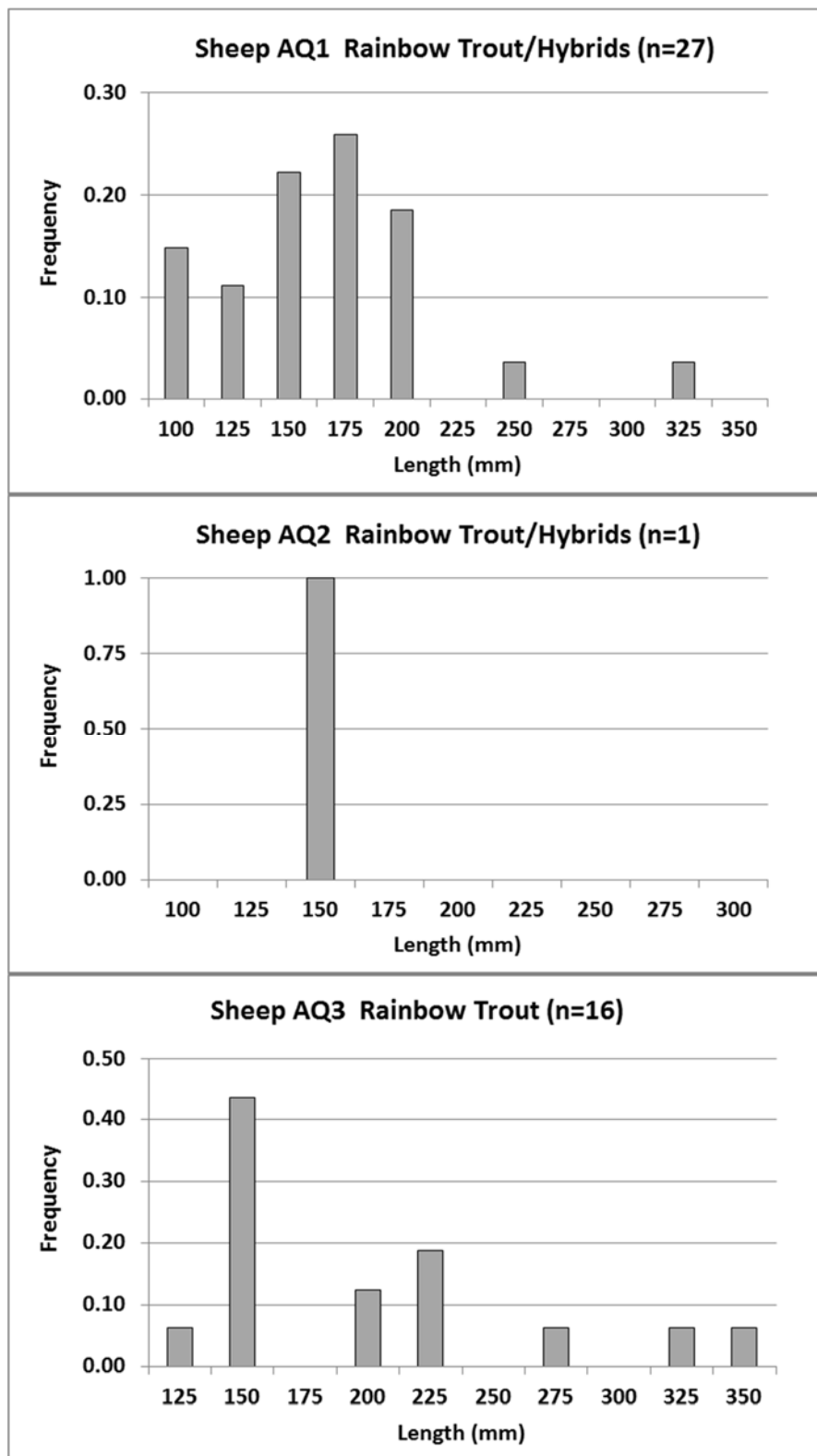
Size frequency collection data for Brown Trout collected at the Tintina Black Butte Mine Sites



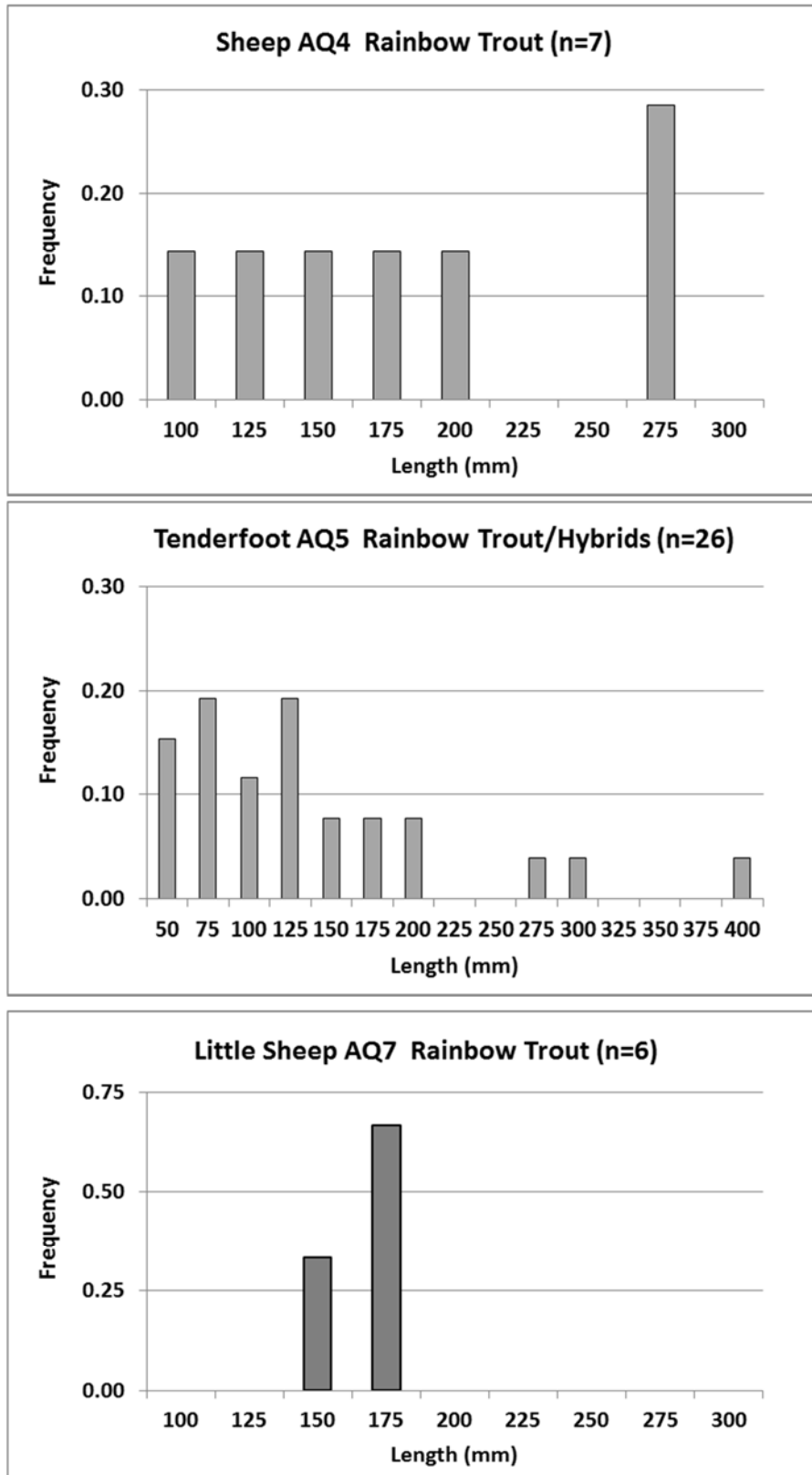
Size-frequency collection data for Brown Trout and Brook Trout collected at the Tintina Black Butte Mine Sites



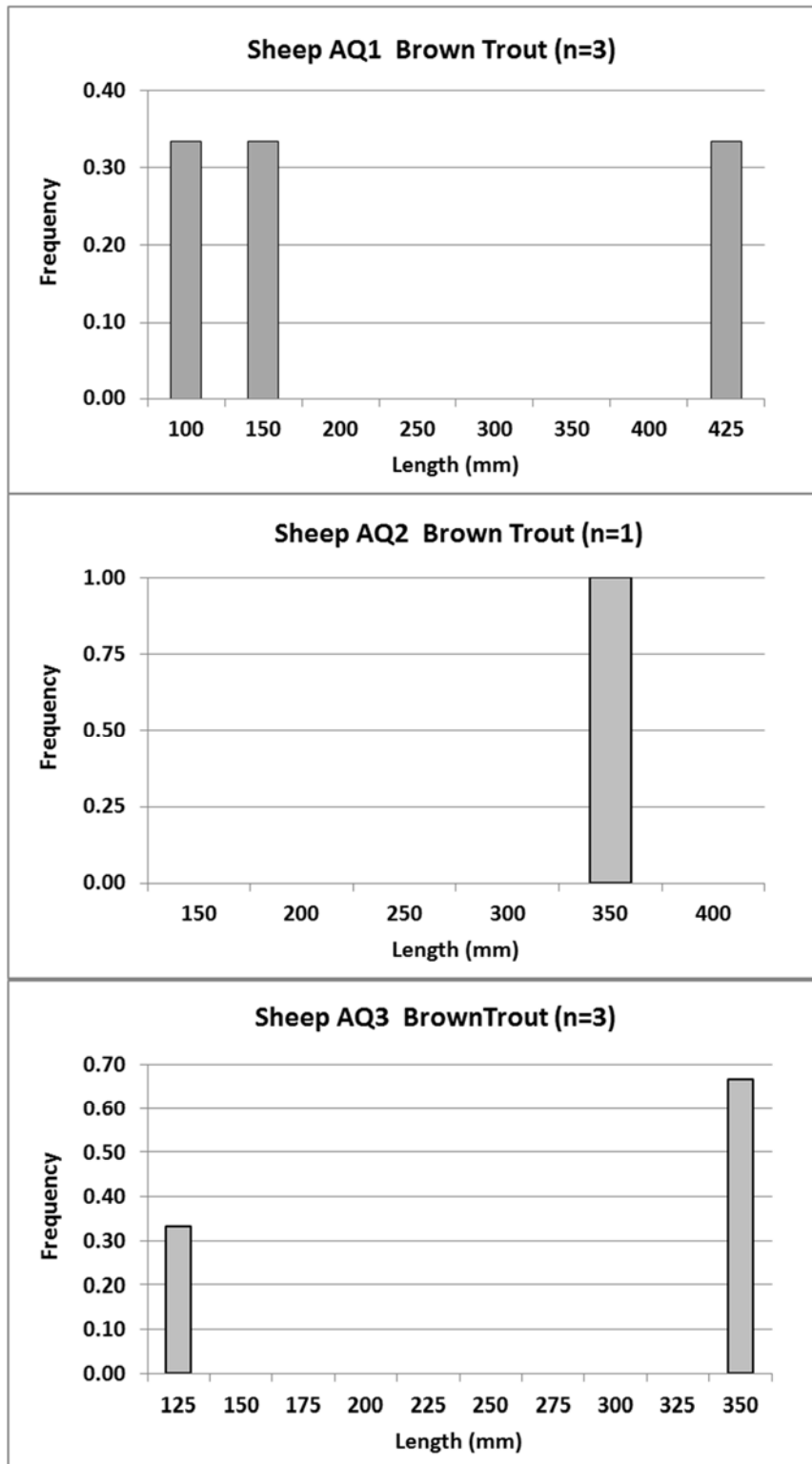
Size frequency collection data for Rainbow Trout and "Cutt-bows" collected during fall 2014 at the Tintina Black Butte Mine Sites.



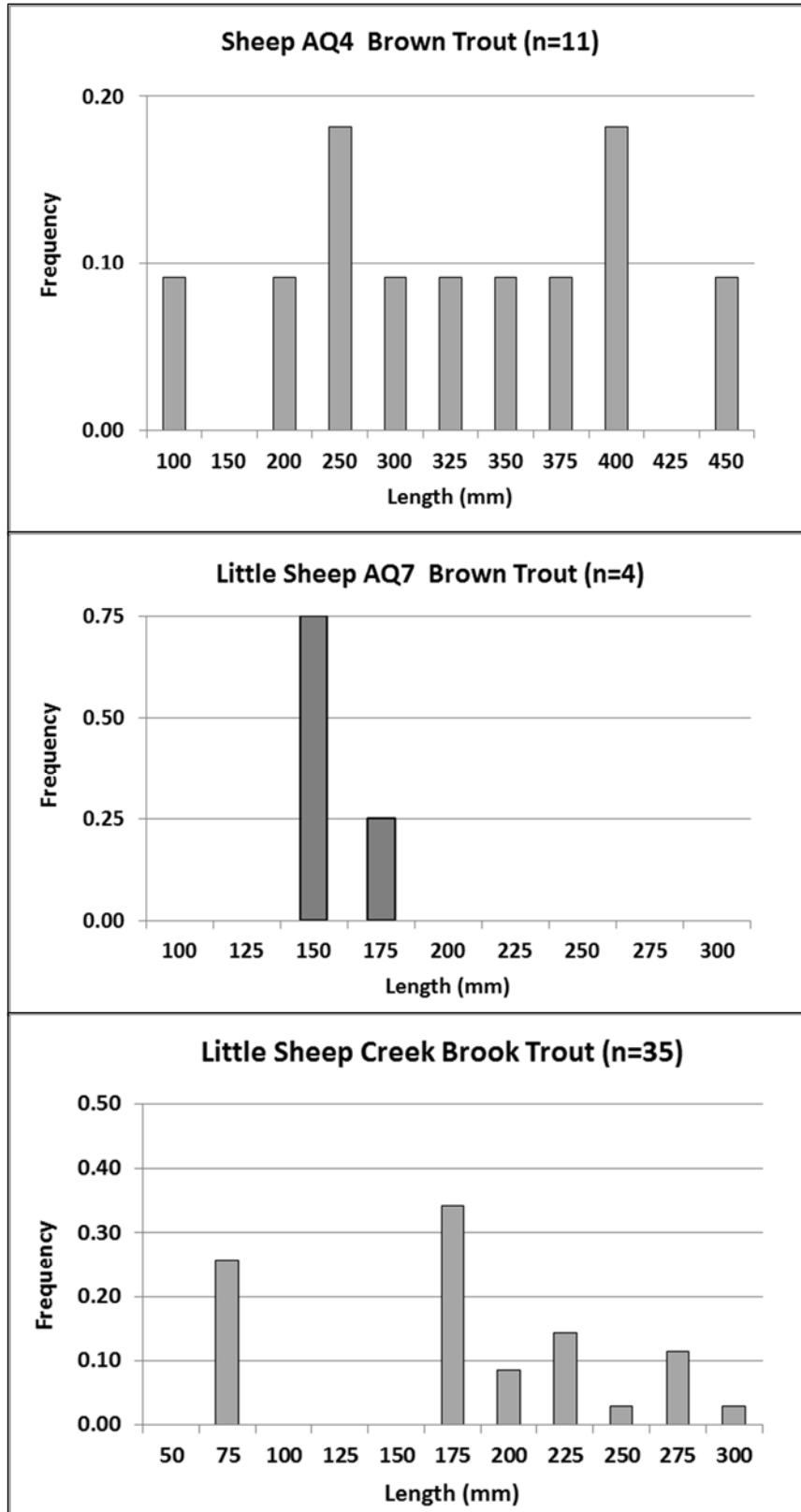
Size frequency collection data for Rainbow Trout and "Cutt-bows" collected during fall 2014 at the Tintina Black Butte Mine Sites.



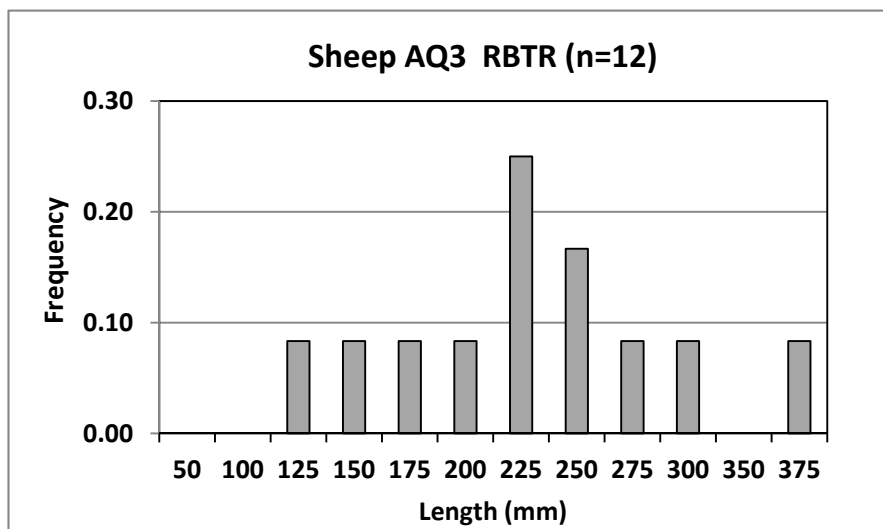
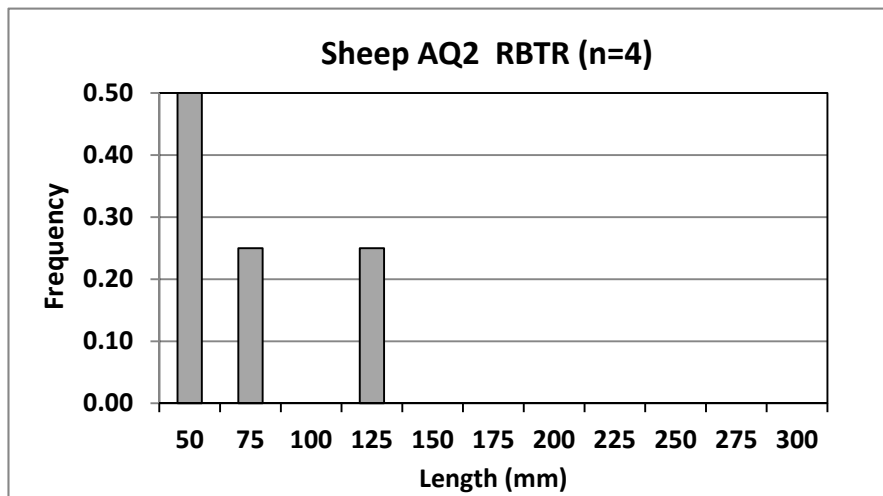
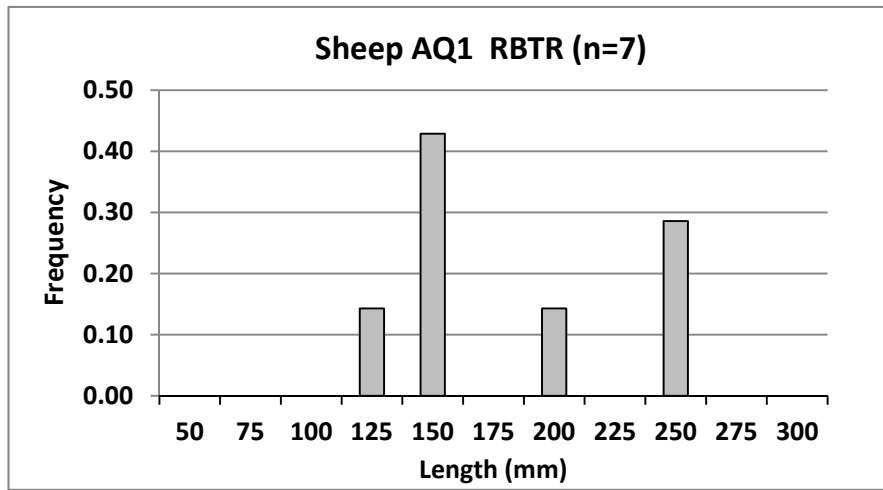
Size frequency collection data for Brown Trout collected during fall 2014 at the Tintina Black Butte Mine Sites



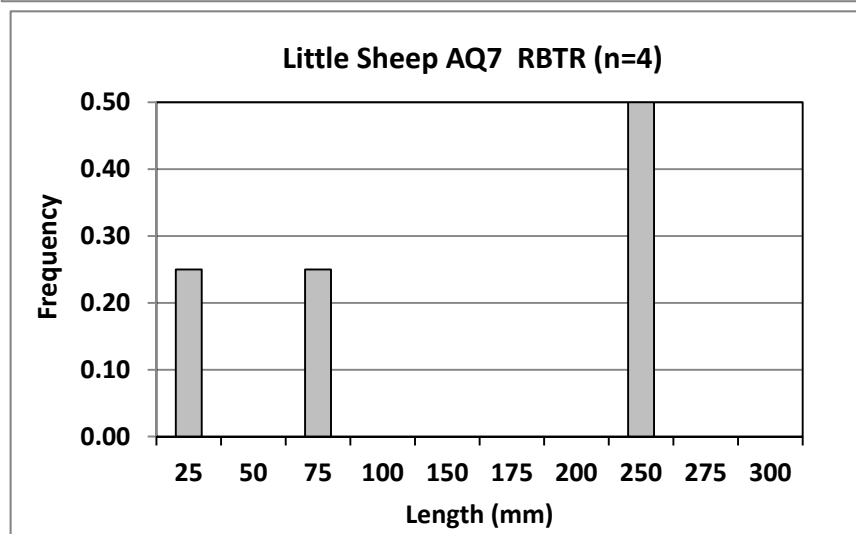
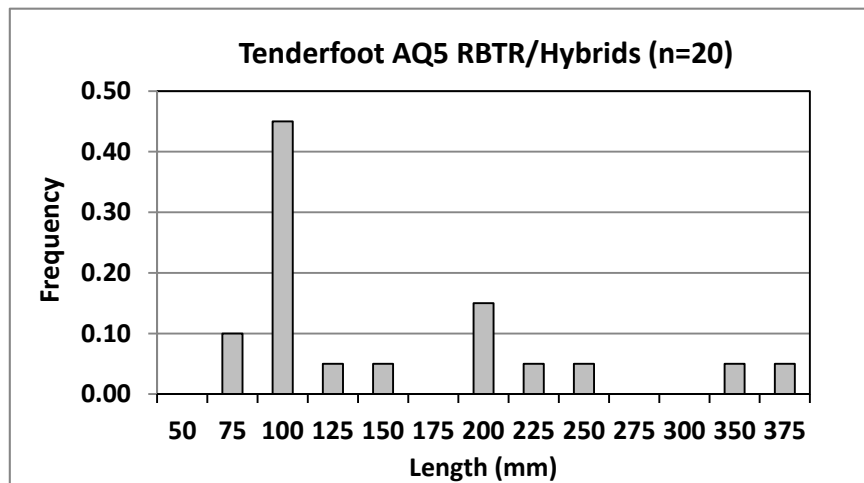
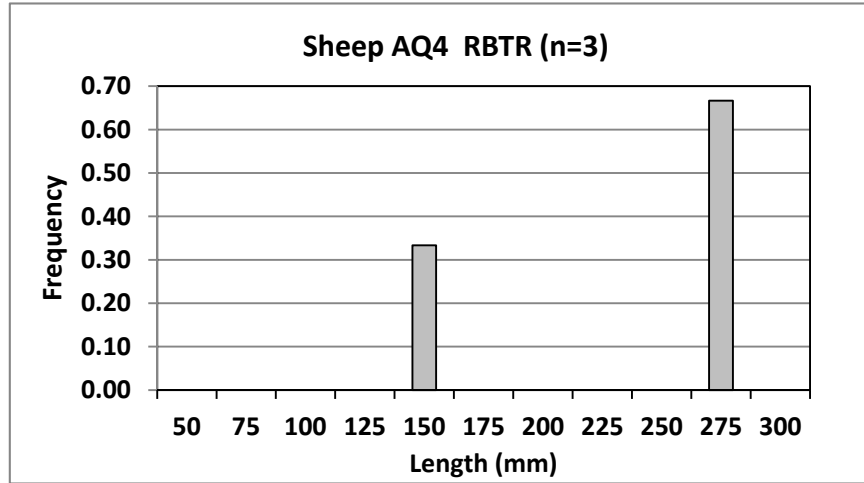
Size-frequency collection data for Brown Trout and Brook Trout collected during fall 2014 at the Tintina Black Butte Mine Sites



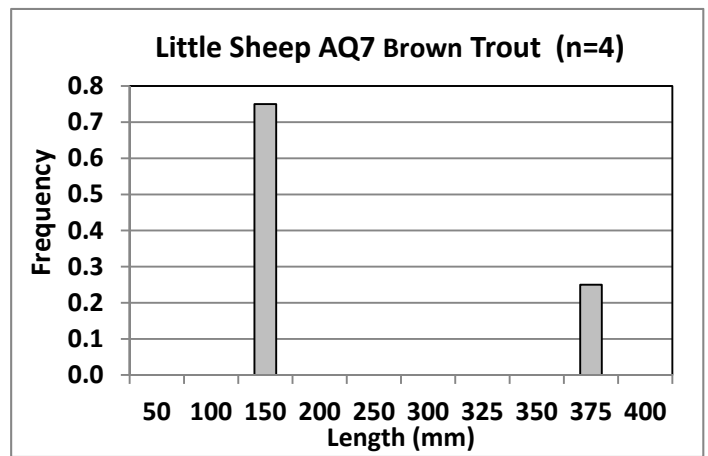
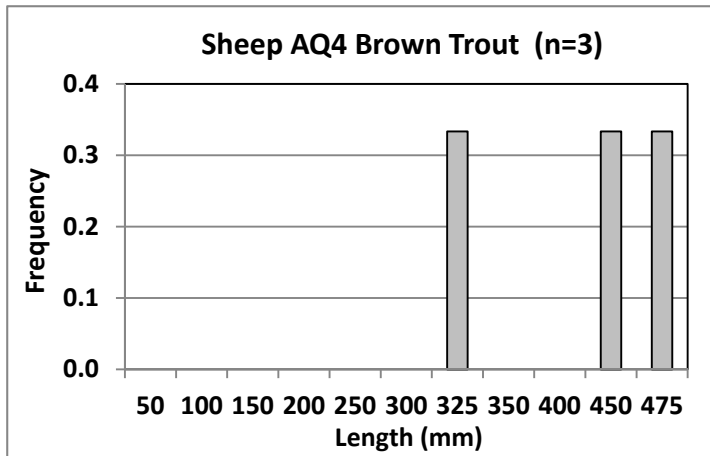
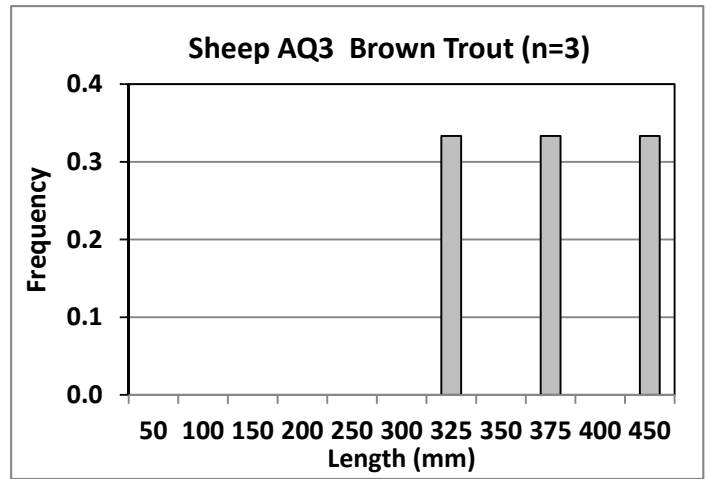
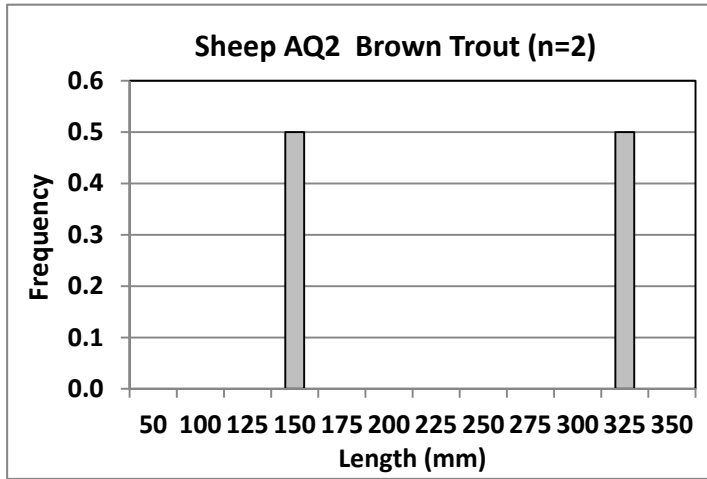
Size frequency collection data for Rainbow Trout collected during summer 2015 at the Tintina
Black Butte Mine Sites



Size frequency collection data for Rainbow Trout and "Cutt-bows" collected during summer 2015
at the Tintina Black Butte Mine Sites



Size frequency collection data for Brown Trout collected during summer 2015 at the Tintina Black Butte Mine Sites



Pages extracted from:

**Stagliano, D. 2018. Baseline Aquatic Surveys and Assessment Summary 2014–2017
of Streams in the Tintina Black Butte Copper Project Area of Meagher County, MT.
Tintina Resources Inc. White Sulphur Springs, Montana.**

Appendix C. Seasonal salmonid size-frequency tables for fall 2017. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Sheep SH.22.7/AQ2 Fall

EBT	# per reach	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	4.0	4.0	20.8	21	27%
100-150mm	3.0	3.0	15.6	16.0	20%
150-200 mm	4.0	4.0	20.8	21	27%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	1.0	1.0	5.2	5	7%
300-350 mm	2.0	2.0	10.4	10	13%
>350 mm	1.0	1.0	5.2	5	7%
total	15.0	15.0	78	78 (78-78)	100%
LOLE	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	3.0	3.0	15.6	16	30%
100-150mm	2.0	2.0	10.4	11	20%
150-200 mm	1.0	1.0	5.2	5	10%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	0.0	0.0	0	0	0%
300-350 mm	1.0	1.0	5.2	5	10%
350-400 mm	1.0	1.0	5.2	5	10%
400-450 mm	2.0	2.0	10.4	10	20%
total	10.0	10.0	52	52 (52-52)	100%
RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	5.0	5.0	26	26 (21-31)	50%
100-150mm	3.0	3.0	15.6	16	30%
150-200 mm	1.0	1.0	5.2	5	10%
200-250 mm	1.0	1.0	5.2	5	10%
250-300 mm	0.0	0.0	0	0	0%
total	10.0	10.0	52	52 (47-57)	100%

Sheep SH.19.2/AQ3 Fall

EBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	0.0	0.0	0	0	0%
100-150mm	0.0	0.0	0	0	0%
150-200 mm	10.0	10.0	52	52 (36-68)	67%
200-250 mm	5.0	5.0	26	26	33%
250-300 mm	0.0	0.0	0	0	0%
>300 mm	0.0	0.0	0	0	0%
total	15.0	15.0	78	78 (68-88)	100%

Appendix C. Sheep Creek seasonal size-frequency graphs for 2017. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker, Catchable size is considered >200mm (8 inches).

Sheep SH.19.2/AQ3 Fall

RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	0.0	0.0	0	0	0%
100-150mm	4.0	4.0	20.8	21	33%
150-200 mm	1.0	1.0	5.2	5	8%
200-250 mm	3.0	3.0	15.6	16	25%
250-300 mm	2.0	2.0	10.4	11	17%
>300 mm	2.0	2.0	10.4	11	17%
total	12.0	12.0	62.4	63 (52-73)	100%

LOLE	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	7.0	7.0	36.4	37 (26-46)	23%
100-150mm	4.0	4.0	20.8	21	13%
150-200 mm	10.0	10.0	52	52 (47-57)	32%
200-250 mm	3.0	3.0	15.6	16 (13-19)	10%
250-300 mm	4.0	4.0	20.8	21	13%
300-350 mm	1.0	1.0	5.2	5	3%
350-400mm	1.0	1.0	5.2	5	3%
400-450mm	0.0	0.0	0	0	0%
450-500mm	1.0	1.0	5.2	5	3%
total	31.0	31.0	161.2	161 (156-166)	100%

MOWH	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	6.0	6.0	31.2	32 (26-36)	60%
100-150mm	0.0	0.0	0	0	0%
150-200 mm	2.0	2.0	10.4	10	20%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	0.0	0.0	0	0	0%
300-350 mm	2.0	2.0	10.4	10	20%
total	10.0	10.0	52	52 (47-57)	100%

LNDA	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	5.0	5.0	26	26 (26-26)	100%
total	5.0	5.0	26	26 (26-26)	100%

WHSU	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
150-200 mm	1.0	1.0	5.2	5	100%

Appendix C. Sheep Creek seasonal size-frequency graphs for 2017. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker, Catchable size is considered >200mm (8 inches).

Sheep SH.18.3/AQ4 Fall

RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	3.0	3.0	15.6	16	9%
100-150mm	16.0	16.0	83.2	83 (78-88)	50%
150-200 mm	7.0	7.0	36.4	37	22%
200-250 mm	4.0	4.0	20.8	21	13%
250-300 mm	1.0	1.0	5.2	5	3%
>300 mm	1.0	1.0	5.2	5	3%
total	32.0	32.0	166.4	166 (161-172)	100%

LOLE	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	10.0	10.0	52	52 (47-57)	46%
100-150mm	4.0	4.0	20.8	21	18%
150-200 mm	4.0	4.0	20.8	21	18%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	2.0	2.0	10.4	10	9%
300-350 mm	1.0	1.0	5.2	5	5%
350-400 mm	1.0	1.0	5.2	5	5%
total	22.0	22.0	114.4	114 (110-118)	100%

MOWH	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	2.0	2.0	10.4	10 (10-10)	65%
100-150mm	0.0	0.0	0	0	0%
150-200 mm	0.0	0.0	0	0	0%
200-250 mm	1.0	1.0	5.2	6	35%
250-300 mm	0.0	0.0	0	0	0%
total	3.0	3.0	15.6	16 (16-16)	100%

LNDA	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	5.0	5.0	26	26 (26-26)	100%
total	5.0	5.0	26	26 (26-26)	100%

Appendix C. Sheep Creek seasonal size-frequency graphs for 2017. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker, Catchable size is considered >200mm (8 inches).

Sheep SH17.5/AQ1 Fall

RBT	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	40.0	30.0	156	156 (146-166)	53%
100-150mm	29.0	21.8	113.1	113 (109-117)	38%
150-200 mm	4.0	3.0	15.6	16	5%
200-250 mm	3.0	2.3	11.7	12	4%
250-300 mm	0.0	0.0	0	0	0%
>300 mm	0.0	0.0	0	0	0%
total	78.0	58.5	304.2	304 (280-328)	100%

LOLE	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	9.0	6.8	35.1	35	45%
100-150mm	3.0	2.3	11.7	12	15%
150-200 mm	6.0	4.5	23.4	24	30%
200-250 mm	2.0	1.5	7.8	8	10%
250-300 mm	0.0	0.0	0	0	0%
>300 mm	0.0	0.0	0	0	0%
total	20.0	15.0	78	78 (78-78)	100%

CTxRBT	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
100-150mm	1.0	0.8	3.9	4	20%
150-200 mm	3.0	2.3	11.7	12	60%
200-250 mm	1.0	0.8	3.9	4	20%
total	5.0	3.8	19.5	20 (20-20)	100%

MOWH	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	7.0	7.0	36.4	36 (26-46)	87%
100-150mm	0.0	0.0	0	0	0%
150-200 mm	1.0	1.0	5.2	6	13%
200-250 mm	0.0	0.0	0	0	0%
total	8.0	8.0	41.6	42 (31-52)	100%

Appendix C cont.. Sheep Creek seasonal size-frequency graphs for 2017. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Sheep SH15.5U/AQ10 Fall

RBT	# per section	# per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	1.0	0.8	3.9	4	10%
100-150mm	0.0	0.0	0	0	0%
150-200 mm	3.0	2.3	11.7	12	30%
200-250 mm	3.0	2.3	11.7	12	30%
250-300 mm	3.0	2.3	11.7	12	30%
total	10.0	7.5	39	39 (31-47)	100%

LOLE	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
100-150mm	1.0	0.8	3.9	4	16%
150-200 mm	1.0	0.8	3.9	4	16%
250-300 mm	1.0	0.8	3.9	4	16%
300-350 mm	1.0	0.8	3.9	4	16%
350-400 mm	1.0	0.8	3.9	4	16%
400-450 mm	1.0	0.8	3.9	4	16%
total	6.0	4.5	23.4	24 (20-28)	100%

MOWH	# per section	# per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
100-150mm	1.0	0.8	3.9	4	9%
150-200 mm	1.0	0.8	3.9	4	9%
200-250 mm	2.0	1.5	7.8	8	18%
250-300 mm	2.0	1.5	7.8	8	18%
300-350 mm	3.0	2.3	11.7	12	27%
350-400 mm	2.0	1.5	7.8	8	18%
total	11.0	8.3	42.9	43 (35-51)	100%

EBT	# per section	# per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	1.0	1.0	5.2	5	100%

Sheep SH15.5D/AQ11

RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	29.0	21.8	113.1	113 (108-118)	30%
100-150mm	39.0	29.3	152.1	152 (143-162)	41%
150-200 mm	13.0	9.8	50.7	51	15%
200-250 mm	12.0	9.0	46.8	47	13%
250-300 mm	1.0	0.8	3.9	4	1%
300-350 mm	0.0	0.0	0	0	0%
total	95.0	71.3	370.5	371 (363-378)	100%

LOLE	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
100-150mm	1.0	0.8	3.9	4	25%
150-200 mm	2.0	1.5	7.8	8	50%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	0.0	0.0	0	0	0%
300-350 mm	0.0	0.0	0	0	0%
350-400 mm	0.0	0.0	0	0	0%
400-450 mm	1.0	0.8	3.9	4	25%
total	4.0	3.0	15.6	16 (8-24)	100%

MOWH	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	9.0	6.8	35.1	35 (31-39)	43%
100-150mm	4.0	3.0	15.6	16	19%
150-200 mm	0.0	0.0	0	0	0%
200-250 mm	1.0	0.8	3.9	4	5%
250-300 mm	0.0	0.0	0	0	0%
300-350 mm	7.0	5.3	27.3	27	33%
total	21.0	15.8	81.9	82 (82-82)	100%

Brook Trout	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	2.0	1.5	7.8	8	40%
100-150mm	1.0	0.8	3.9	4	20%
150-200 mm	2.0	1.5	7.8	8	40%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	0.0	0.0	0	0	0%
300-350 mm	0.0	0.0	0	0	0%
total	5.0	3.8	19.5	20 (20-20)	100%

LODA	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	5.0	3.8	19.5	20 (17-23)	33%
100-150mm	10.0	7.5	39	39	67%
150-200 mm	0.0	0.0	0	0	0%
total	15.0	11.3	58.5	59 (55-63)	100%

Appendix C cont.. Tenderfoot Creek seasonal size-frequency graphs for 2017. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Tenderfoot TN9.4/AQ6 Fall

RBT	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	16.0	12.0	62.4	63 (53-74)	22%
100-150mm	21.0	15.8	81.9	82 (75-89)	28%
150-200 mm	22.0	16.5	85.8	86 (78-94)	30%
200-250 mm	11.0	8.3	42.9	43	15%
250-300 mm	3.0	2.3	11.7	12	4%
300-350 mm	1.0	0.8	3.9	4	1%
total	74.0	55.5	288.6	289 (277-308)	100%

CT x RBT Hybrid	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	7.0	5.3	27.3	28	11%
100-150mm	22.0	16.5	85.8	86 (76-96)	36%
150-200 mm	20.0	15.0	78	78	33%
200-250 mm	12.0	9.0	46.8	47	20%
250-300 mm	0.0	0.0	0	0	0%
total	61.0	45.8	237.9	238 (234-242)	100%

Brook Trout	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	1.0	0.8	3.9	4	13%
100-150mm	2.0	1.5	7.8	7	25%
150-200 mm	3.0	2.3	11.7	12	38%
200-250 mm	2.0	1.5	7.8	8	25%
total	8.0	6.0	31.2	31 (27-35)	100%

Appendix C. Moose and Little Sheep Creek seasonal size-frequency graphs for 2017. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker, Catchable size is considered >200mm (8 inches).

Moose Creek MO.1 (Fall)

Rainbow Trout	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	22.0	31.7	164.7	165 (157-172)	38%
100-150mm	13.0	18.7	97.3	97.3	22%
150-200 mm	16.0	23.0	119.8	119.8	28%
200-250 mm	7.0	10.1	52.4	52.4	12%
total	58.0	83.5	434.3	434 (427-442)	100%
CT x RBT Hybrid	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	13.0	18.7	97.3	104 (67-142)	50%
100-150mm	4.0	5.8	30.0	30	15%
150-200 mm	4.0	5.8	30.0	30	15%
200-250 mm	4.0	5.8	30.0	30	15%
250-300 mm	1.0	1.4	7.5	8	4%
total	26.0	37.4	194.7	195 (172-232)	100%
Brook Trout	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	13.0	18.7	97	97 (83-111)	27%
100-150mm	16.0	23.0	119	119 (112-127)	33%
150-200 mm	12.0	17.3	90	114 (104-125)	25%
200-250 mm	4.0	5.8	30	57	8%
250-300 mm	2.0	2.9	15	15	4%
250-300 mm	1.0	1.4	7.5	7.5	2%
total	48.0	69.1	359.5	360 (345-375)	100%

Little Sheep LS.1 Fall

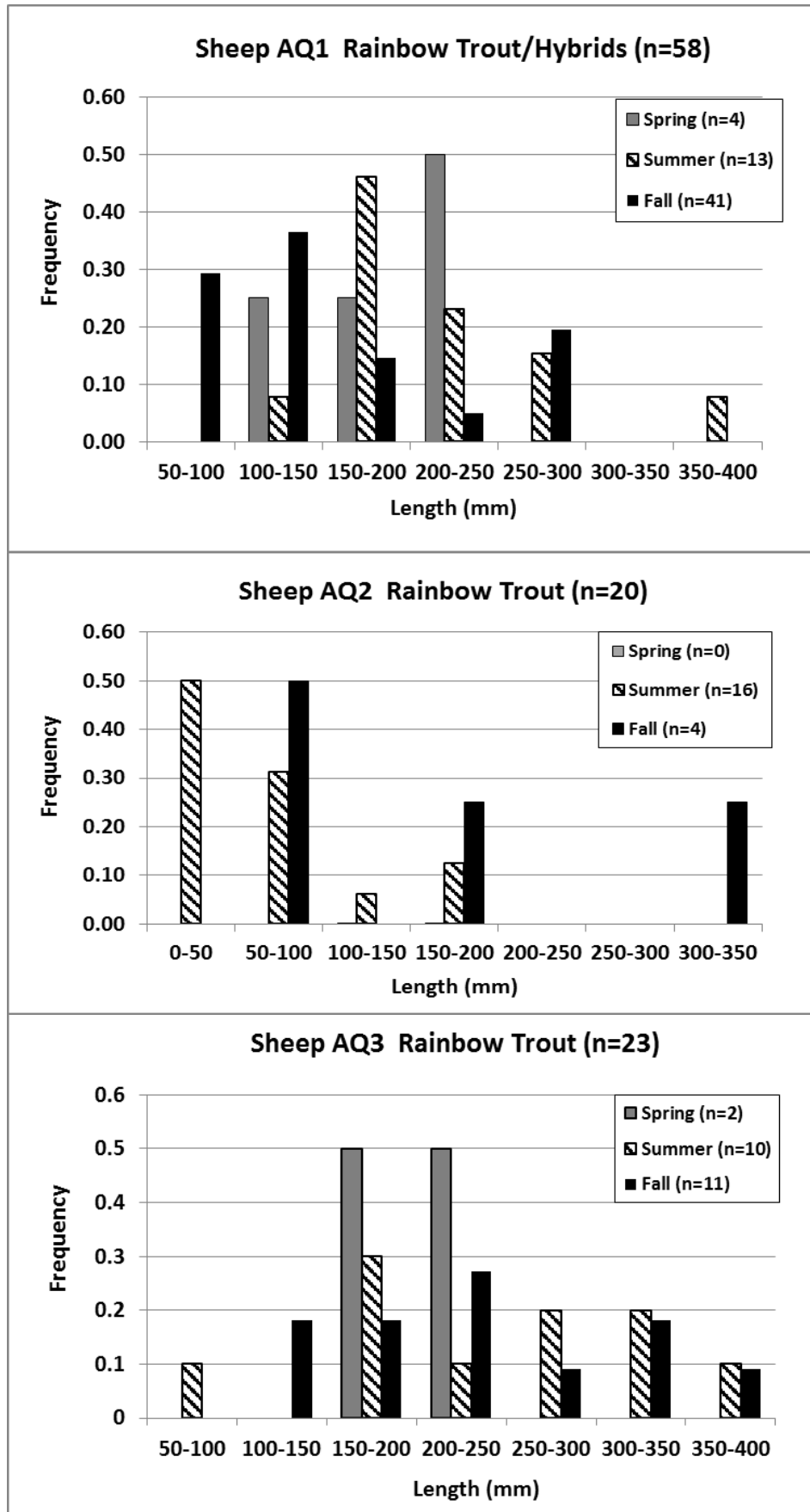
Brook Trout	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	62.0	124.0	644.8	645 (635-655)	45%
100-150mm	9.0	18.0	93.6	94	6%
150-200 mm	49.0	98.0	509.6	510 (500-520)	35%
200-250 mm	17.0	34.0	176.8	177	12%
250-300 mm	2.0	4.0	20.8	21	1%
>300 mm	0.0	0.0	0	0	0%
total	139.0	278.0	1445.6	1,446 (1435-1456)	100%

Appendix C. Seasonal salmonid size-frequency tables for fall 2017. Catchable size is considered >200mm (8 inches).

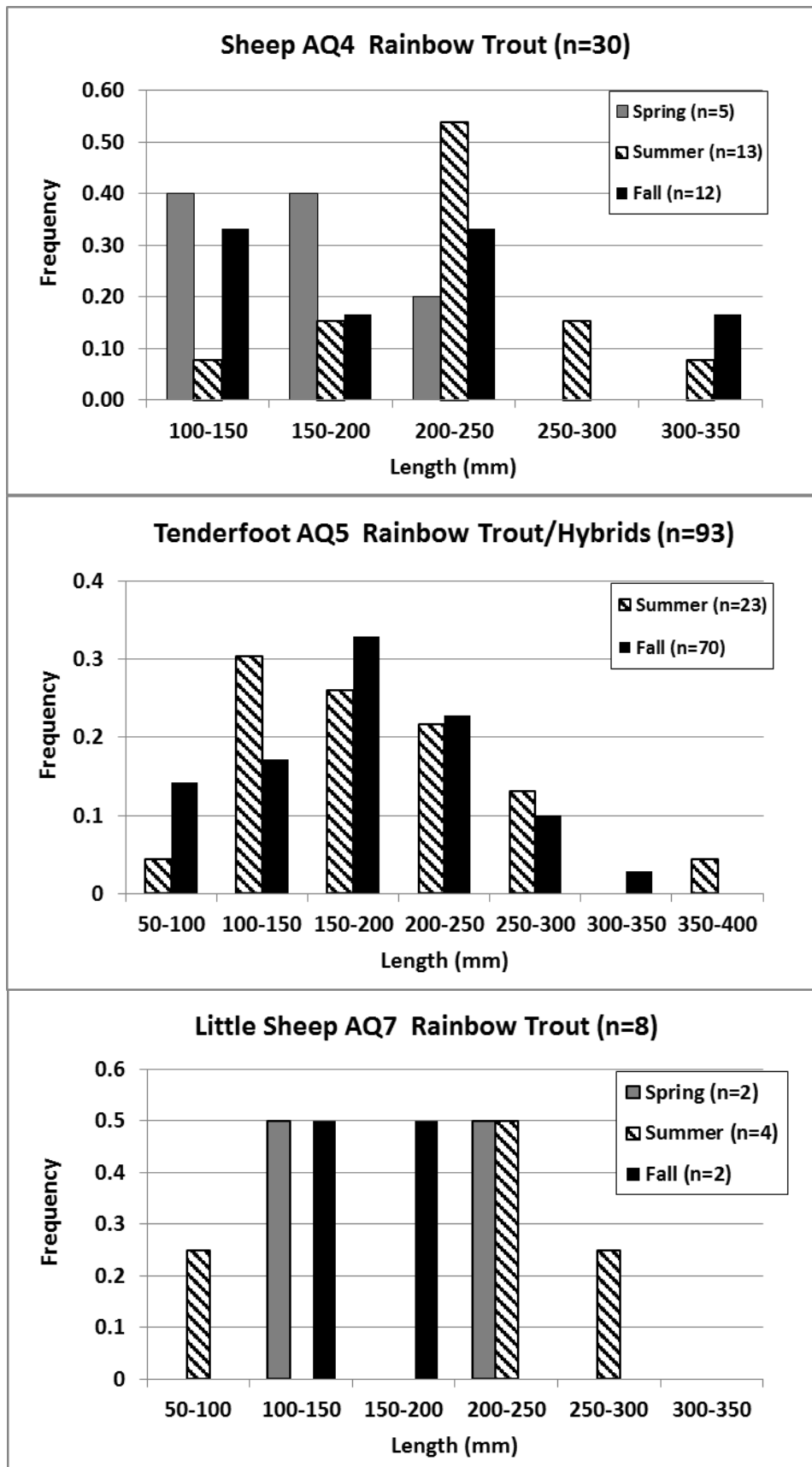
Little Sheep LS.1 Fall

Brown Trout	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	3.0	6.0	31.2	31 (31-31)	75%
100-150mm	1.0	2.0	10.4	11	25%
150-200 mm	0.0	0.0	0	0	0%
total	4.0	8.0	41.6	42	100%
MOWH	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	6.0	12.0	62.4	63	100%
100-150mm	0.0	0.0	0	0	0%
150-200 mm	0.0	0.0	0	0	0%
total	6.0	12.0	62.4	63	100%
WHSU	# per section	# per 1000ft	# per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	1.0	2.0	10.4	11	20%
100-150mm	3.0	6.0	31.2	31	60%
150-200 mm	1.0	2.0	10.4	10	20%
total	5.0	10.0	52	52	100%

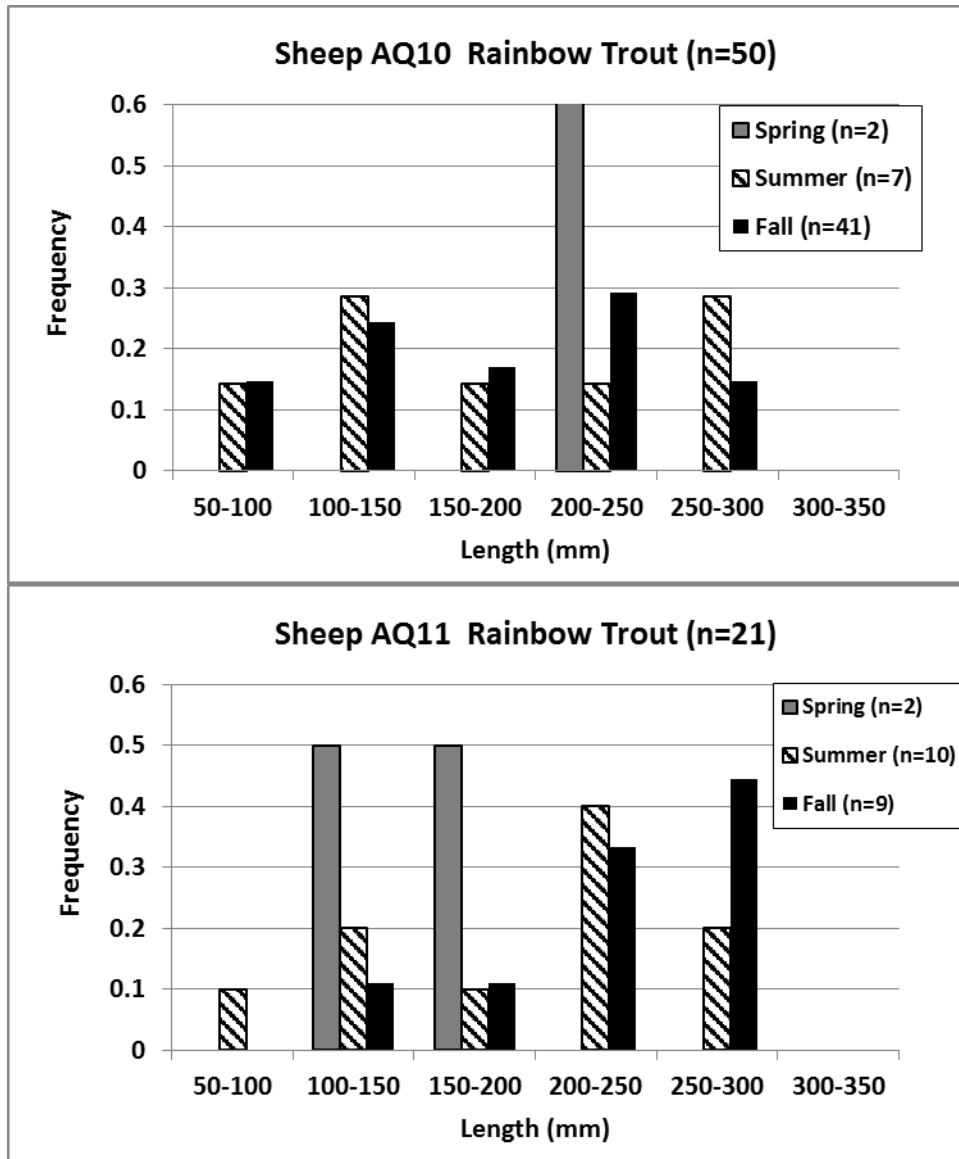
Appendix C. Sheep Creek seasonal Rainbow trout (RBTR) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



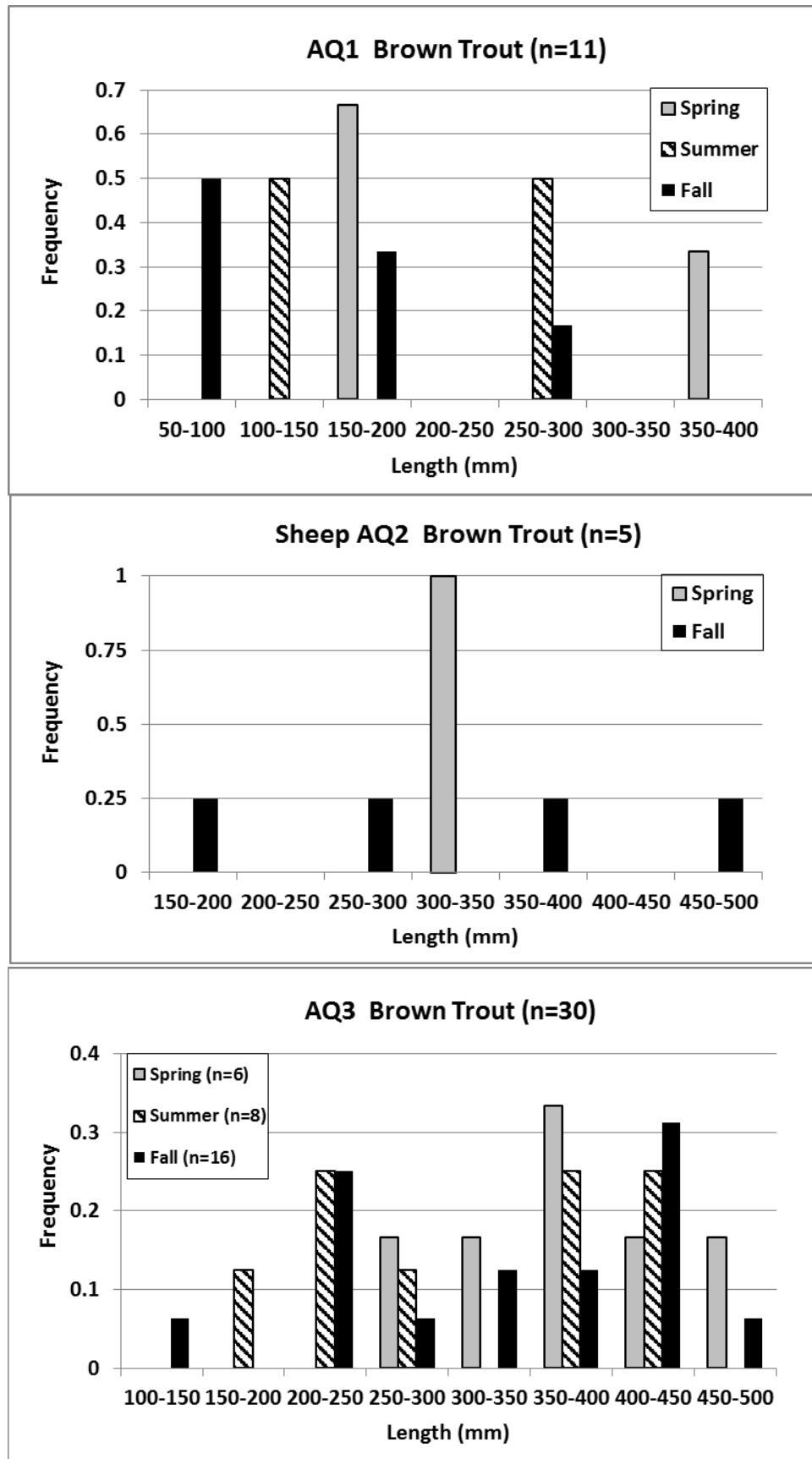
Appendix C. Sheep Creek seasonal rainbow trout (RBTR) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



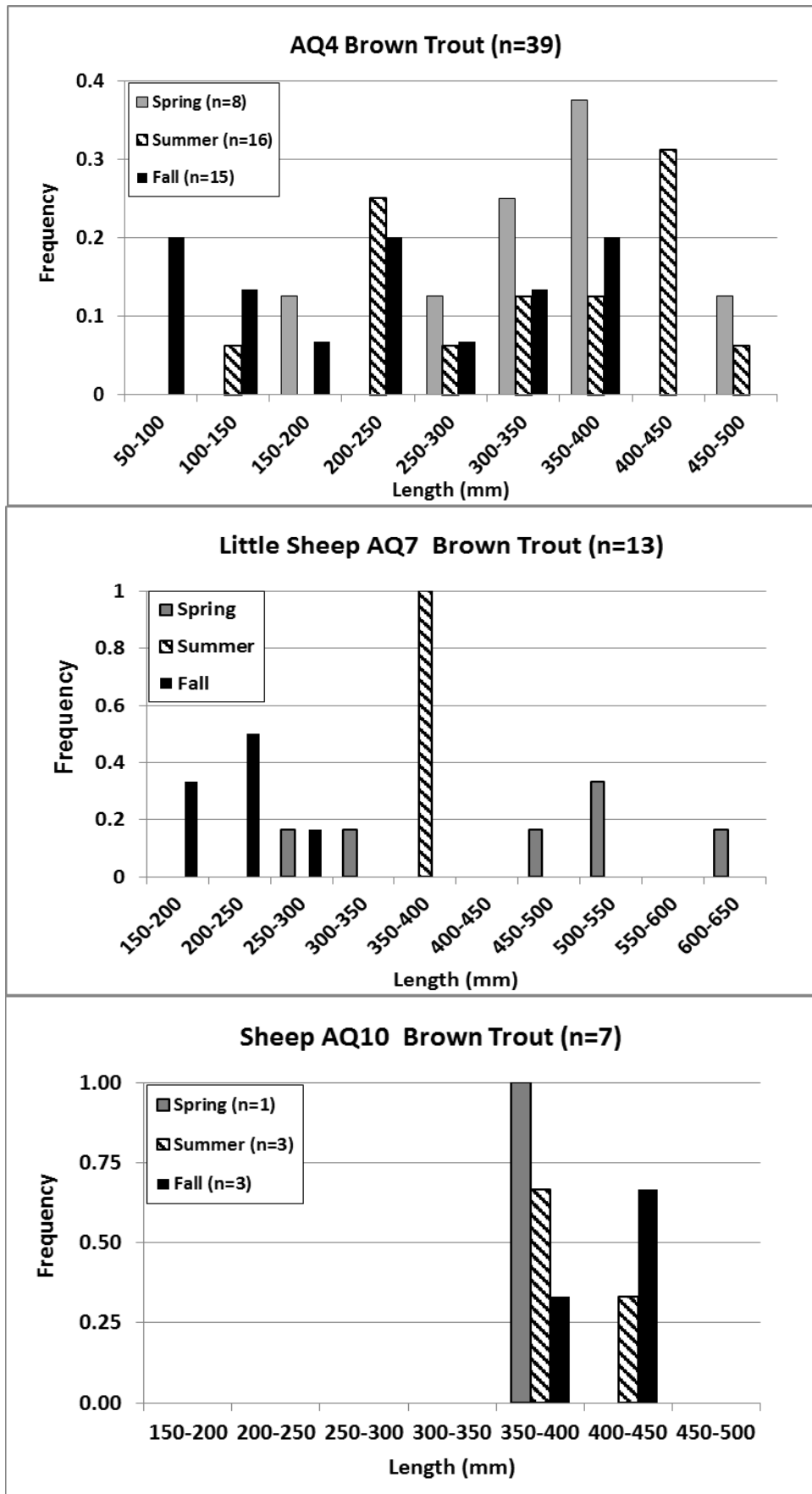
Appendix C. Sheep Creek seasonal rainbow trout (RBTR) size-frequency graphs for 2016.
Catchable size is considered >200mm (8 inches).



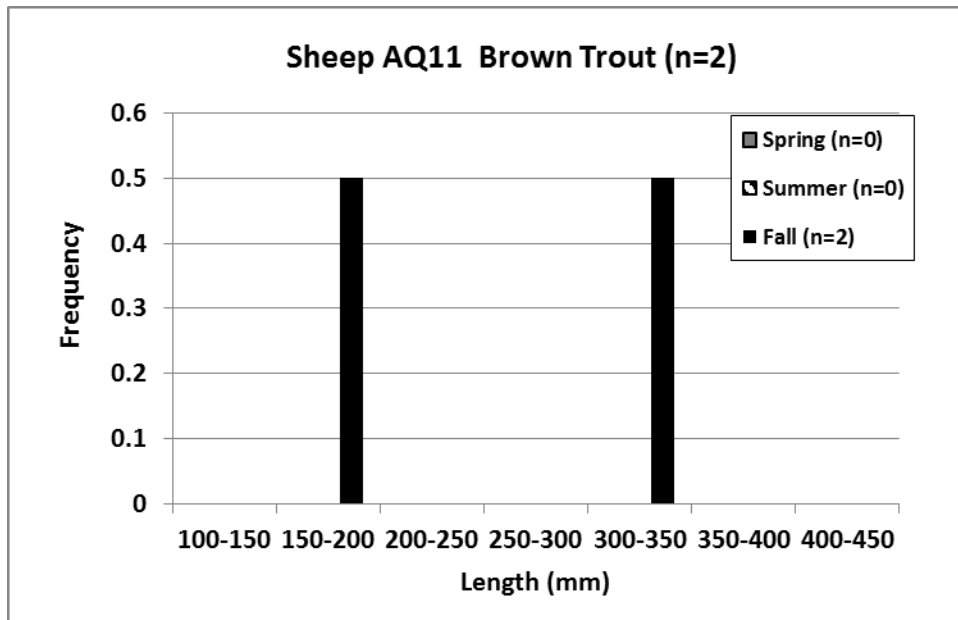
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches).



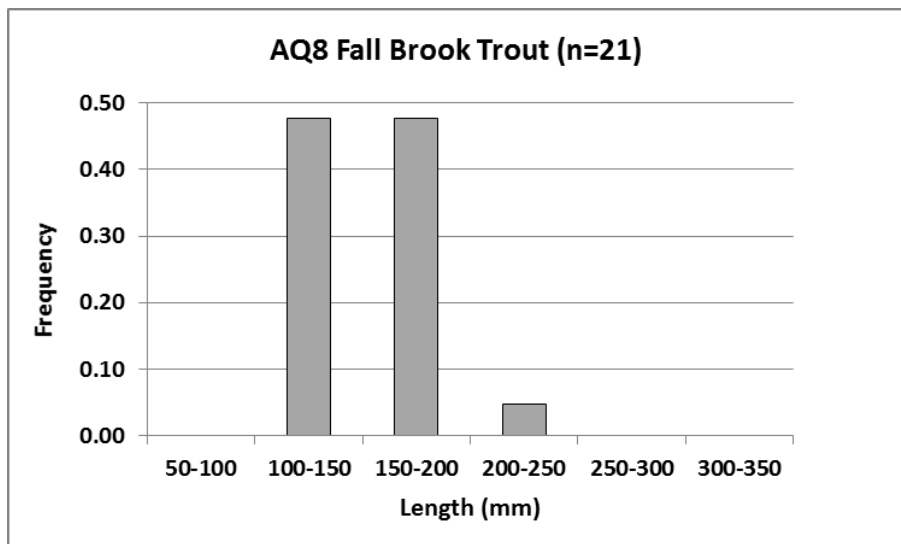
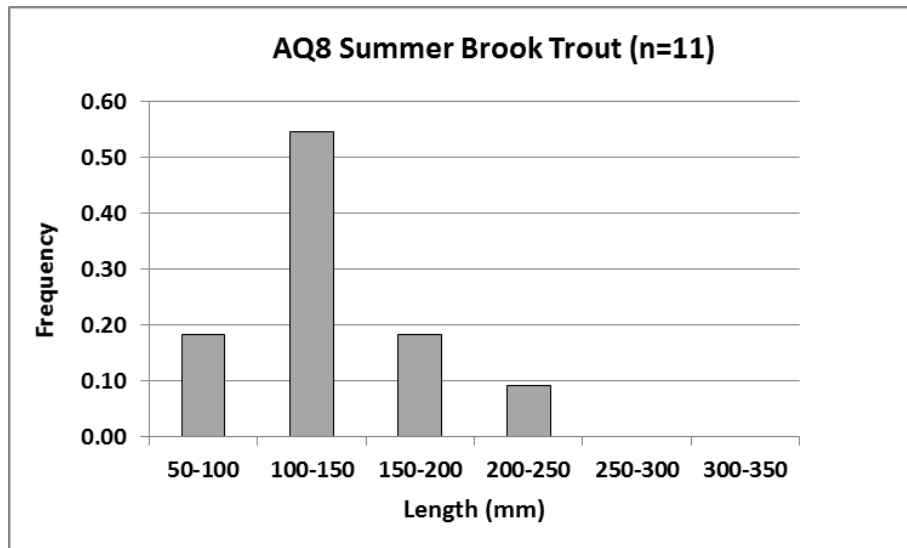
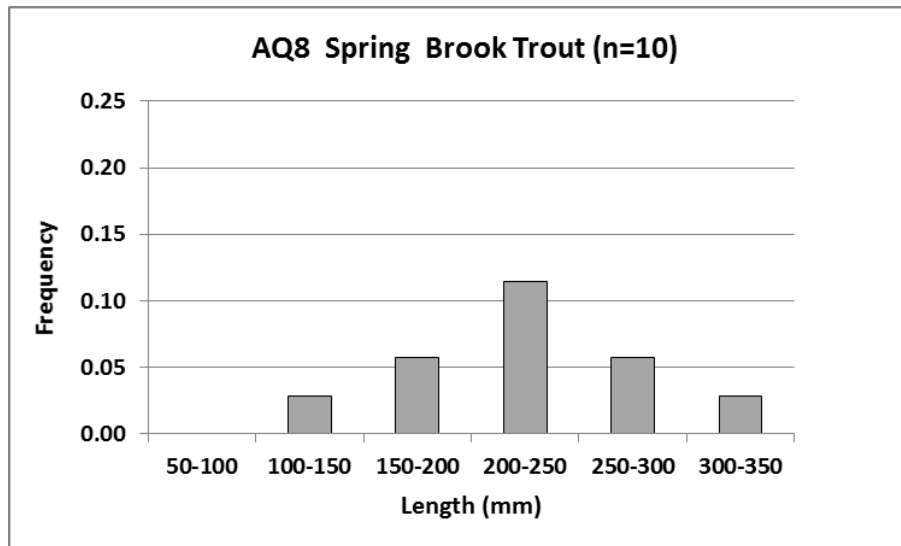
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
 Catchable size is considered >200mm (8 inches)



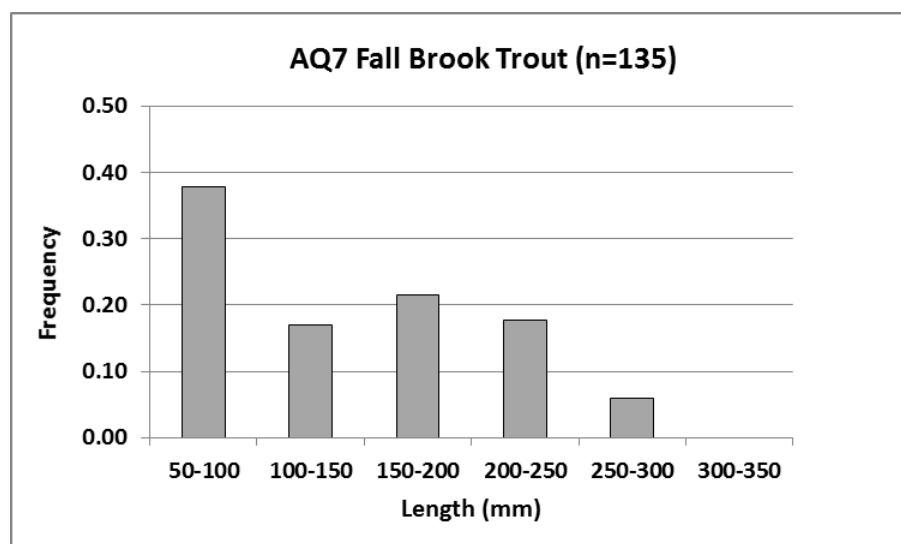
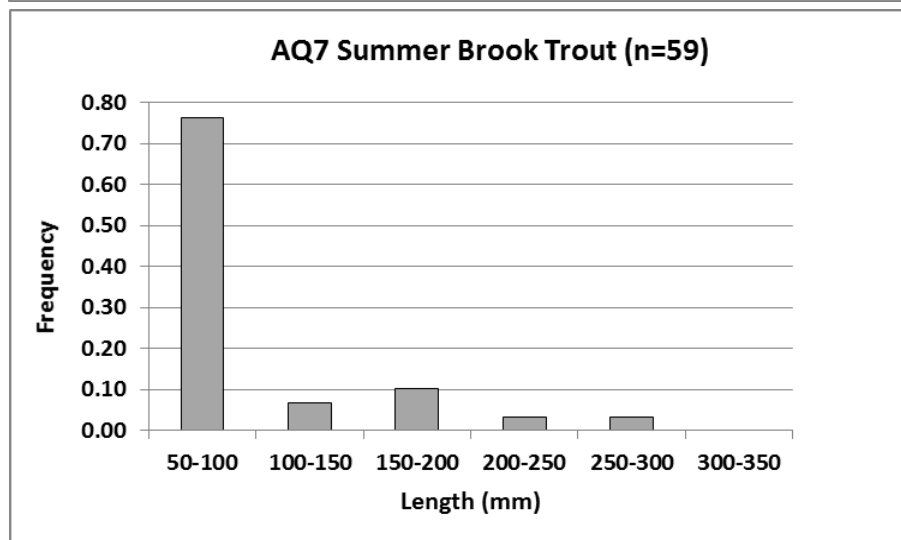
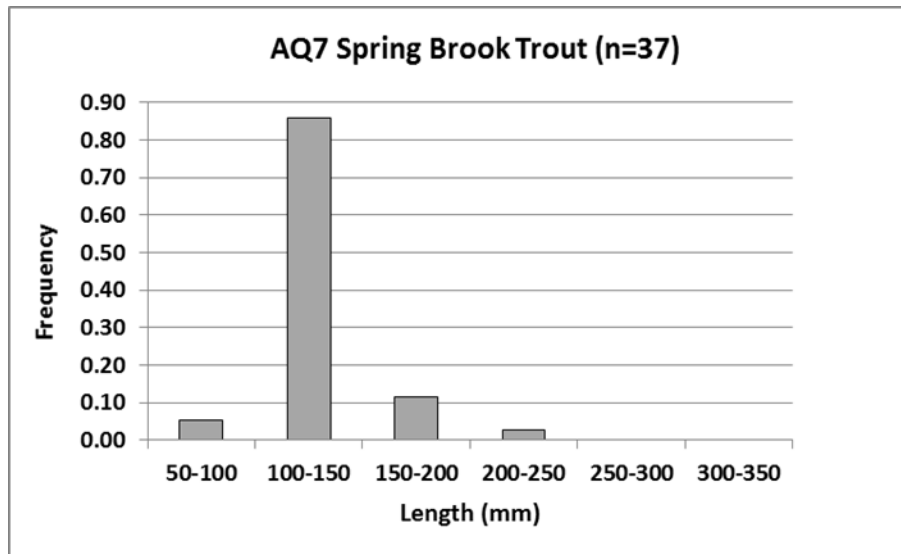
Appendix C. Sheep Creek seasonal Brown trout (LOLE) size-frequency graphs for 2016.
Catchable size is considered >200mm (8 inches)



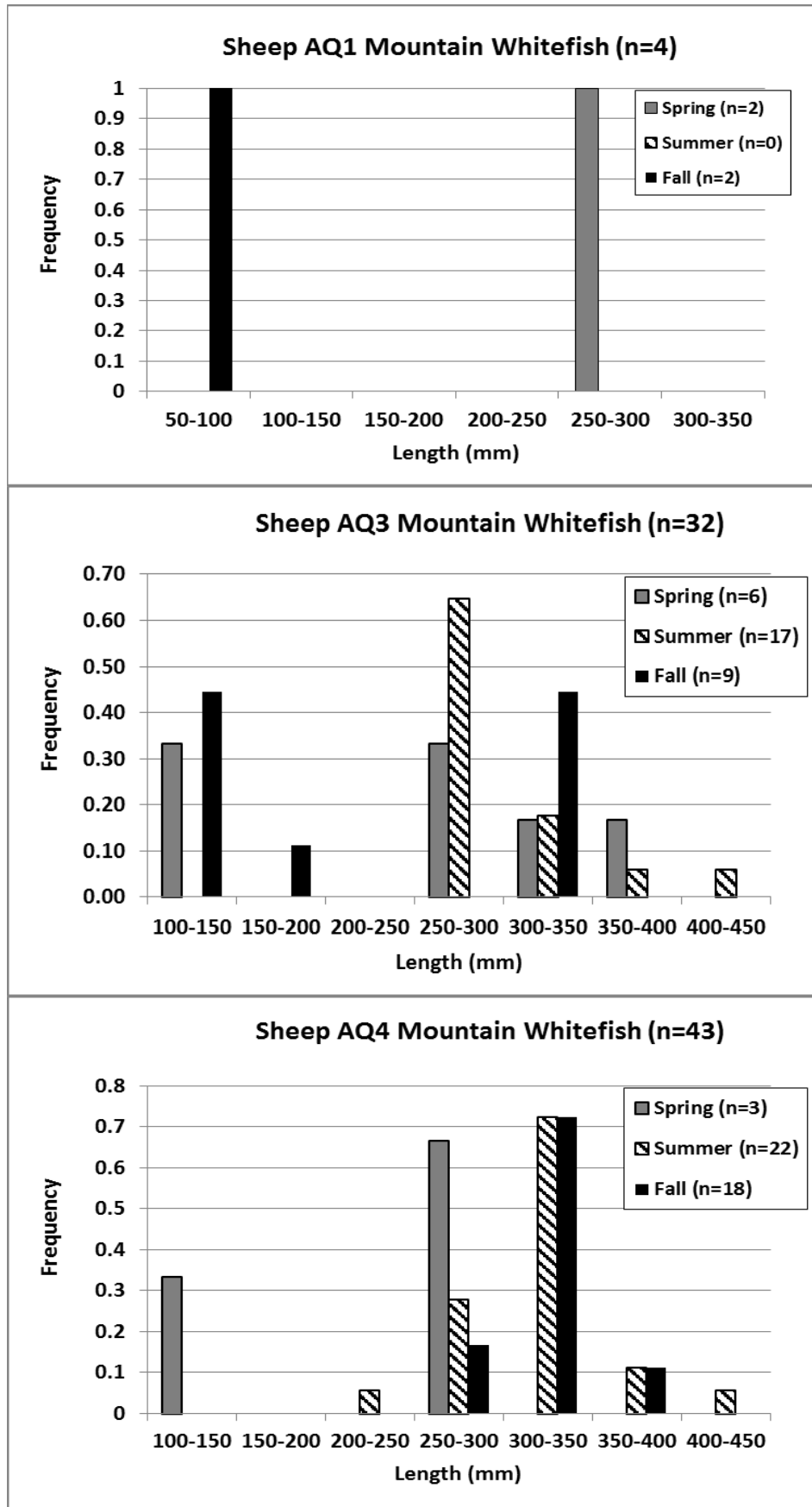
Appendix C. Little Sheep Creek seasonal Brook trout (EBT) size-frequency graphs for 2016



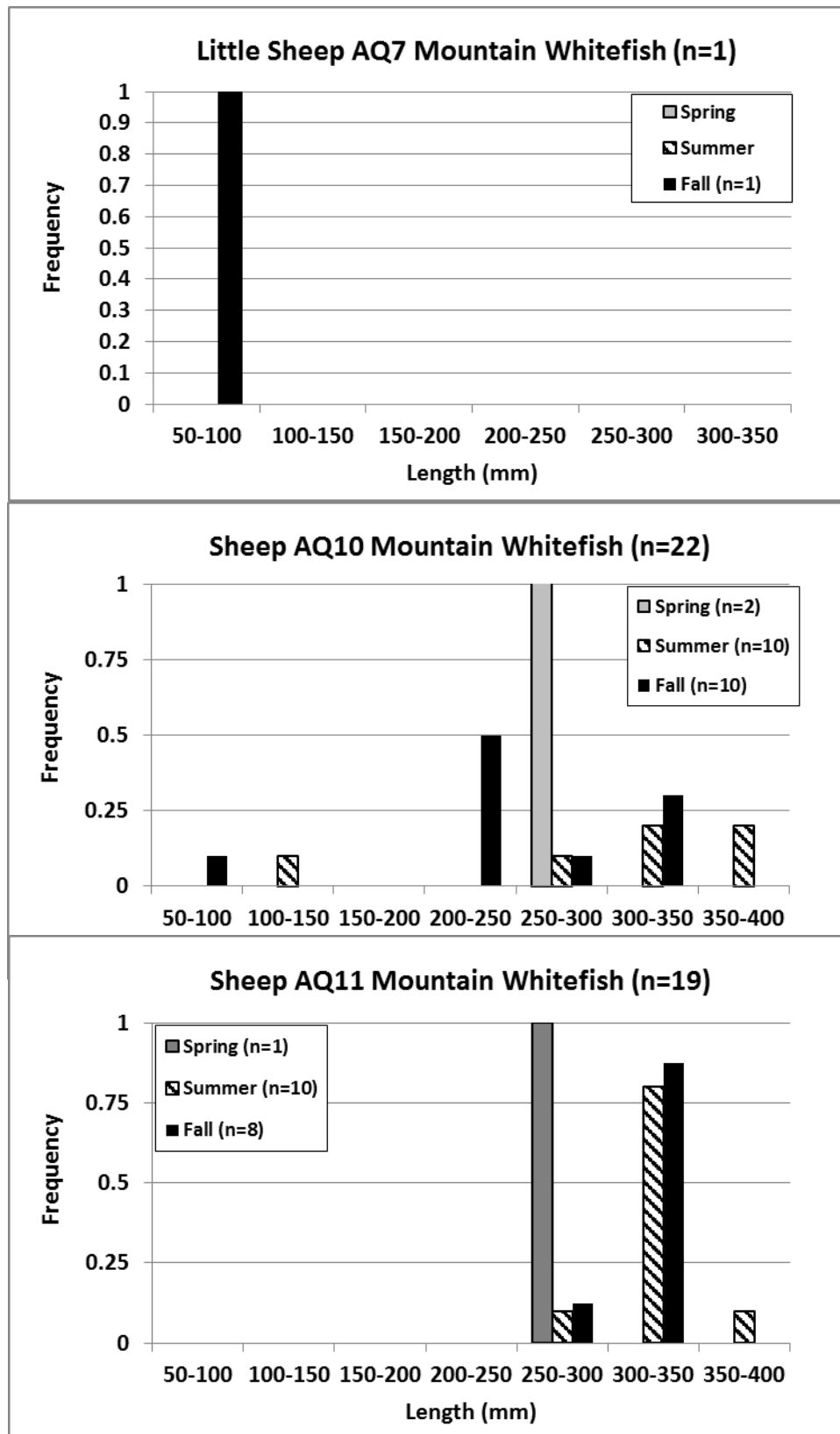
Appendix C. Little Sheep Creek seasonal Brook trout (EBT) size-frequency graphs for 2016



Appendix C. Sheep Creek seasonal Mountain Whitefish (MOWH) size-frequency graphs for 2016. Catchable size is considered >200mm (8 inches).



Appendix C. Sheep Creek seasonal Mountain Whitefish (MOWH) size-frequency graphs for 2016. Catchable size is considered >200mm (8 inches)



Pages extracted from:

Stagliano, D. 2019. Aquatic Monitoring Plan and Assessment Summary for Streams in the Tintina Black Butte Copper Project Area of Meagher County, MT 2014-2018. Prepared for Tintina Montana, Inc., White Sulphur Springs, Montana. Montana Biological Survey, Helena, Montana. April 2019.

Appendix C. Summer salmonid size-frequency tables for 2018. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Sheep SH.22.7/AQ2 Summer

EBT	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
50-100 mm	0.0	0.0	0.0	0	0%
100-150mm	0.0	0.0	0.0	0	0%
150-200 mm	1.0	0.8	4.0	14	25%
200-250 mm	2.0	1.5	7.9	20	50%
300-350 mm	1.0	0.8	4.0	14	25%
total	4.0	3.0	15.8	48 (36-60)	100%

LOLE	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
400-450 mm	1.0	1.5	7.8	8	100%

RBT	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
<50mm	2.0	1.5	7.9	24	25%
50-100 mm	1.0	0.8	4.0	12	12%
100-150mm	1.0	0.8	4.0	12	12%
150-200 mm	2.0	1.5	7.9	24	25%
200-250 mm	0.0	0.0	0.0	0	0%
250-300 mm	2.0	1.5	7.9	24	25%
total	8.0	6.1	32	96 (78-114)	100%

Sheep SH.19.2/AQ3 Summer

LOLE	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
100-150mm	4.0	2.7	13.9	21	18%
150-200 mm	2.0	1.3	7.0	10	8%
200-250 mm	4.0	2.7	13.9	21	18%
250-300 mm	5.0	3.4	17.4	26	22%
300-350 mm	1.0	0.7	3.5	5	4%
350-400 mm	1.0	0.7	3.5	5	4%
400-450 mm	4.0	2.7	13.9	21	18%
450-500 mm	2.0	1.3	7.0	10	8%
total	23.0	15.4	80.1	119 (110-130)	100%

Sheep SH.19.2/AQ3 Summer (cont.)

EBT	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
100-150mm	1.0	0.7	3.5	5	19%
150-200 mm	1.0	0.7	3.5	5	19%
200-250 mm	3.0	2.0	10.5	16	62%
250-300 mm	0.0	0.0	0.0	0	0%
total	5.0	3.4	17.4	26 (21-31)	100%
RBT	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
100-150mm	1.0	0.7	3.5	7	15%
150-200 mm	1.0	0.7	3.5	7	15%
200-250 mm	2.0	1.3	7.0	15	32%
250-300 mm	5.0	3.4	17.4	35	74%
300-350 mm	0.0	0.0	0.0	0	0%
total	9.0	6.0	31.4	64 (32-96)	100%
MOWH	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
200-250 mm	1.0	0.7	3.5	5	14%
250-300 mm	0.0	0.0	0.0	0	0%
300-350 mm	5.0	3.4	17.4	26	72%
350-400 mm	1.0	0.7	3.5	5	14%
total	7.0	4.7	24.4	50 (46-54)	100%
WHSU	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
250-300 mm	2.0	1.3	7.0	10	50%
350-400 mm	1.0	0.7	3.5	5.2	25%
400-450 mm	1.0	0.7	3.5	5.2	25%
total	4.0	2.7	13.9	21 (21-21)	100%

Sheep SH.18.3/AQ4 Summer

LOLE	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
100-150mm	1.0	0.7	3.5	7	8%
150-200 mm	2.0	1.3	7.0	18	21%
200-250 mm	1.0	0.7	3.5	7	8%
250-300 mm	1.0	0.7	3.5	7	8%
300-350 mm	1.0	0.7	3.5	7	8%
350-400 mm	1.0	0.7	3.5	7	8%
400-450 mm	3.0	2.0	10.5	24	29%
450-500 mm	1.0	0.7	3.5	7	8%
total	11.0	7.4	38.3	84 (66-102)	100%

Appendix C. Summer salmonid size-frequency tables for 2018. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker, Catchable size is considered >200mm (8 inches).

Sheep SH.18.3/AQ4 Summer (cont.)

RBTR	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
50-100 mm	0.0	0.0	0.0	0	0%
100-150mm	0.0	0.0	0.0	0	0%
150-200 mm	2.0	1.3	7.0	8	22%
200-250 mm	3.0	2.0	10.5	14	39%
250-300 mm	1.0	0.7	3.5	7	19%
300-350 mm	1.0	0.7	3.5	7	19%
total	7.0	4.7	24.4	36 (24-58)	100%

MOWH	# per section	# per 1000ft	# per mile	Pop Est. Peterson per mile (95% CI)	% of total catch
150-200 mm	0.0	0.0	0.0	0	0%
200-250 mm	0.0	0.0	0.0	0	0%
250-300 mm	3.0	2.0	10.5	15	21%
300-350 mm	8.0	5.4	27.9	31	43%
350-400 mm	4.0	2.7	13.9	20	28%
350-400 mm	1.0	0.7	3.5	6	8%
total	16.0	10.7	55.7	72 (60-84)	100%

EBT	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
100-150mm	0.0	0.0	0.0	0	0%
150-200 mm	0.0	0.0	0.0	0	0%
200-250 mm	1.0	0.7	3.5	8	50%
250-300 mm	1.0	0.7	3.5	8	50%
total	2.0	1.3	7.0	16 (8-24)	100%

Sheep SH17.5/AQ1 Summer

LOLE	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
50-100 mm	0.0	0.0	0.0	0	0%
100-150mm	8.0	5.4	27.9	41	65%
150-200 mm	3.0	2.0	10.5	15	24%
200-250 mm	1.0	0.7	3.5	7	11%
250-300 mm	0.0	0.0	0.0	0	0%
300-350 mm	0.0	0.0	0.0	0	0%
total	10.0	6.7	34.8	63 (56-70)	100%

Appendix C. Summer salmonid size-frequency tables for 2018. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Sheep SH17.5/AQ1 Summer (cont.)

EBT	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
50-100 mm	0.0	0.0	0.0	0	0%
100-150mm	2.0	1.5	7.9	8	66%
150-200 mm	0.0	0.0	0.0	0	0%
200-250 mm	1.0	0.8	4.0	4	33%
300-350 mm	0.0	0.0	0.0	0	0%
total	3.0	2.3	11.9	12 (6-18)	100%

RBT	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
50-100 mm	1.0	0.7	3.5	7	3%
100-150mm	14.0	9.4	48.8	98	44%
150-200 mm	12.0	8.0	41.8	83	37%
200-250 mm	4.0	2.7	13.9	29	13%
250-300 mm	1.0	0.7	3.5	7	3%
300-350 mm	0.0	0.0	0.0	0	0%
total	32.0	21.4	111.5	224 (170-274)	100%

MOWH	# per section	# per 1000ft	# per mile	Petersen Pop. Est. # per mile (95% CI)	% of total catch
100-150 mm	2.0	1.3	7.0	7	50%
150-200 mm	0.0	0.0	0.0	0	0%
250-300 mm	2.0	1.3	7.0	7	50%
total	4.0	2.7	13.9	14 (10-18)	100%

Tenderfoot Creek TN.9.3/AQ5 Summer

RBT	# per section	# per 1000ft	# per mile	# per mile (95% CI)	% of total catch
50-100 mm	1.0	1.0	5.2	5.2	10%
100-150mm	1.0	1.0	5.2	5.2	10%
150-200 mm	8.0	8.0	41.6	46.8	80%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	0.0	0.0	0	0	0%
total	10.0	10.0	52	52 (47-57)	100%

Appendix C. Summer salmonid size-frequency tables for 2018. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Tenderfoot TN.9.3/AQ5 Summer (cont.)

CTxRBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	1.0	1.0	5.2	5.2	16%
100-150mm	1.0	1.0	5.2	5.2	16%
150-200 mm	4.0	4.0	20.8	20.8	65%
200-250 mm	0.0	0.0	0	0	0%
250-300 mm	0.0	0.0	0	0	0%
>300 mm	0.0	0.0	0	0	0%
total	6.0	6.0	31.2	32 (32-32)	100%

WSCT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
100-150 mm	1.0	1.0	5.2	6 (6-6)	100%

Appendix C cont.. Sheep Creek seasonal size-frequency graphs for 2018. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Sheep SH15.5U/AQ10 Summer

RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	4.0	2.7	13.9	13.9	5%
100-150mm	37.0	24.8	128.9	128.9	44%
150-200 mm	27.0	18.1	94.1	94.1	32%
200-250 mm	8.0	5.4	27.9	27.9	10%
250-300 mm	5.0	3.4	17.4	17.4	6%
>300 mm	3.0	2.0	10.5	10.5	4%
total	84.0	56.3	292.7	293 (253-333)	100%

LOLE	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
100-150mm	3.0	2.0	10.5	10.5	27%
150-200 mm	3.0	2.0	10.5	10.5	27%
200-250 mm	2.0	1.3	7.0	7.0	18%
250-300 mm	1.0	0.7	3.5	3.5	9%
300-350 mm	1.0	0.7	3.5	3.5	9%
350-400 mm	1.0	0.7	3.5	3.5	9%
total	11.0	7.4	38.3	39 (34-44)	100%

EBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100mm	0.0	0.0	0.0	0.0	0%
100-150mm	0.0	0.0	0.0	0.0	0%
150-200 mm	6.0	4.0	20.9	20.9	60%
200-250 mm	4.0	2.7	13.9	13.9	40%
total	10.0	6.7	34.8	35 (30-40)	100%

CT x RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100mm	0.0	0.0	0.0	0.0	0%
100-150mm	6.0	4.0	20.9	20.9	60%
150-200 mm	2.0	1.3	7.0	7.0	20%
200-250 mm	2.0	1.3	7.0	7.0	20%
total	10.0	6.7	34.8	35 (31-39)	100%

MOWH	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100mm	1.0	0.7	3.5	3	3%
100-150mm	6.0	4.0	20.9	21	19%
150-200 mm	4.0	2.7	13.9	14	12%
200-250 mm	4.0	2.7	13.9	14	12%
250-300 mm	4.0	2.7	13.9	14	12%
300-350 mm	10.0	6.7	34.8	35	31%
350-400 mm	3.0	2.0	10.5	10	9%
total	32.0	21.4	111.488	112 (102-122)	100%

Appendix C. Moose and Little Sheep Creek seasonal size-frequency graphs for 2018. EBT = brook trout, RBT = rainbow trout, LOLE = brown trout, CTxRBT= cutthroat-rainbow trout hybrid, WSCT= westslope cutthroat trout, MWF = mountain whitefish, LNDA = longnose dace, MSU = mountain sucker, WHSU = white sucker. Catchable size is considered >200mm (8 inches).

Moose Creek MO.1 (Summer/Fall)

RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
<50 mm	132.0	184.8	961.0	961.0	45%
50-100 mm	139.0	194.6	1011.9	1011.9	47%
100-150mm	17.0	23.8	123.8	123.8	6%
150-200 mm	5.0	7.0	36.4	36.4	2%
200-250 mm	2.0	2.8	14.6	14.6	1%
250-300 mm	0.0	0.0	0.0	0.0	0%
>300 mm	1.0	1.4	7.3	7.3	0%
total	296.0	414.4	2154.9	2155 (2148-2163)	100%

CT x RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100mm	0.0	0.0	0.0	0.0	0%
100-150mm	5.0	7.0	36.4	37.0	83%
150-200 mm	1.0	1.4	7.3	7.0	17%
200-250 mm	0.0	0.0	0.0	0.0	0%
total	6.0	8.4	43.7	44 (44-44)	100%

EBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100mm	13.0	18.2	94.6	94.6	37%
100-150mm	9.0	12.6	65.5	65.5	26%
150-200 mm	6.0	8.4	43.7	43.7	17%
200-250 mm	3.0	4.2	21.8	21.8	9%
250-300 mm	4.0	5.6	29.1	29.1	11%
total	35.0	49.0	254.8	255 (248-262)	100%

Appendix C. Seasonal salmonid size-frequency tables for summer 2018. Catchable size is considered >200mm (8 inches).

Little Sheep LS.1 Summer

EBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	19.0	38.0	197.6	197.6	54%
100-150mm	8.0	16.0	83.2	83.2	23%
150-200 mm	7.0	14.0	72.8	72.8	20%
200-250 mm	1.0	2.0	10.4	10.4	3%
250-300 mm	0.0	0.0	0	0	0%
total	35.0	70.0	364.0	364 (302-416)	100%

LOLE	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
100-150 mm	1.0	2.0	10.4	10.4	50%
400-450 mm	1.0	2.0	10.4	10.4	50%
total	2.0	4.0	20.8	21 (21-21)	100%

RBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
300-350 mm	1.0	1.0	5.2	5.2	100%
total	1.0	1.0	5.2	5.0 (5.0-5.0)	100%

Little Sheep LS.7 Summer

EBT	Avg # per section	Avg # per 1000ft	Avg # per mile	Avg # per mile (95% CI)	% of total catch
50-100 mm	0.0	0.0	0	0	0%
100-150mm	0.0	0.0	0	0	0%
150-200 mm	4.0	8.0	41.6	42	40%
200-250 mm	6.0	12.0	62.4	62	60%
250-300 mm	0.0	0.0	0	0	0%
total	10.0	20.0	104.0	104 (104-104)	100%