Fraser Sockeye & Pink Escapement Options

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for: FN Forum
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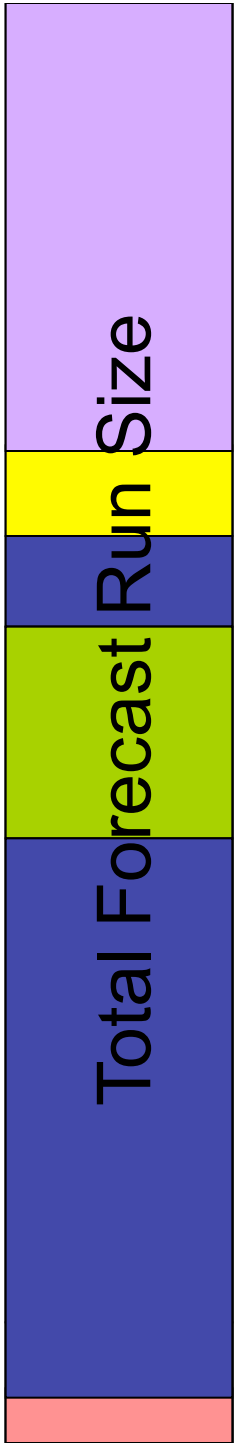
Overview

- Fraser Sockeye
  - Run size → allocations
  - TAM Rules
  - 2013 Escapement Scenario examples
- Fraser Pink
  - 2013 Escapement Plan

Sockeye TAC Calculation (Total Allowable Catch)



spawning escapement (at least 40%)

test fishing, management adjustment

16.5% of remainder to US

Note: the following is NOT to scale!!!

~ 1M fish to First Nations in-river & marine
- to meet Food, Social & Ceremonial (FSC)

total Canadian TAC
commercial fisheries get remainder
(commercial includes EO, demo, Harvest Agreement)

400,000 directly to CDN (FN adjustment)
except for recreational catch (~2-3%)

Total Allowable Mortality (TAM) Rules

or

"How many fish can be caught taking into account that some fish won't survive to reach the spawning grounds?"

Long-term Strategies

3 Basic Types, Many Variations

Fixed Escapement

- Try to have same abundance of spawners every year
- Exploitation rate increases with run size

Fixed Exploitation Rate

- Try to harvest same proportion of run every year
- Spawner abundance increases with run size

Abundance-Based Strategies

- Manage small runs different from large runs

TAM Rule is an example of this

TAM Concepts

low run size → run size → high run size

Low Abundance Zone

- ideally, every fish that returns goes to the spawning grounds
- no directed fisheries, except test fisheries and potentially minimal FSC
- exploitation rate low to very low

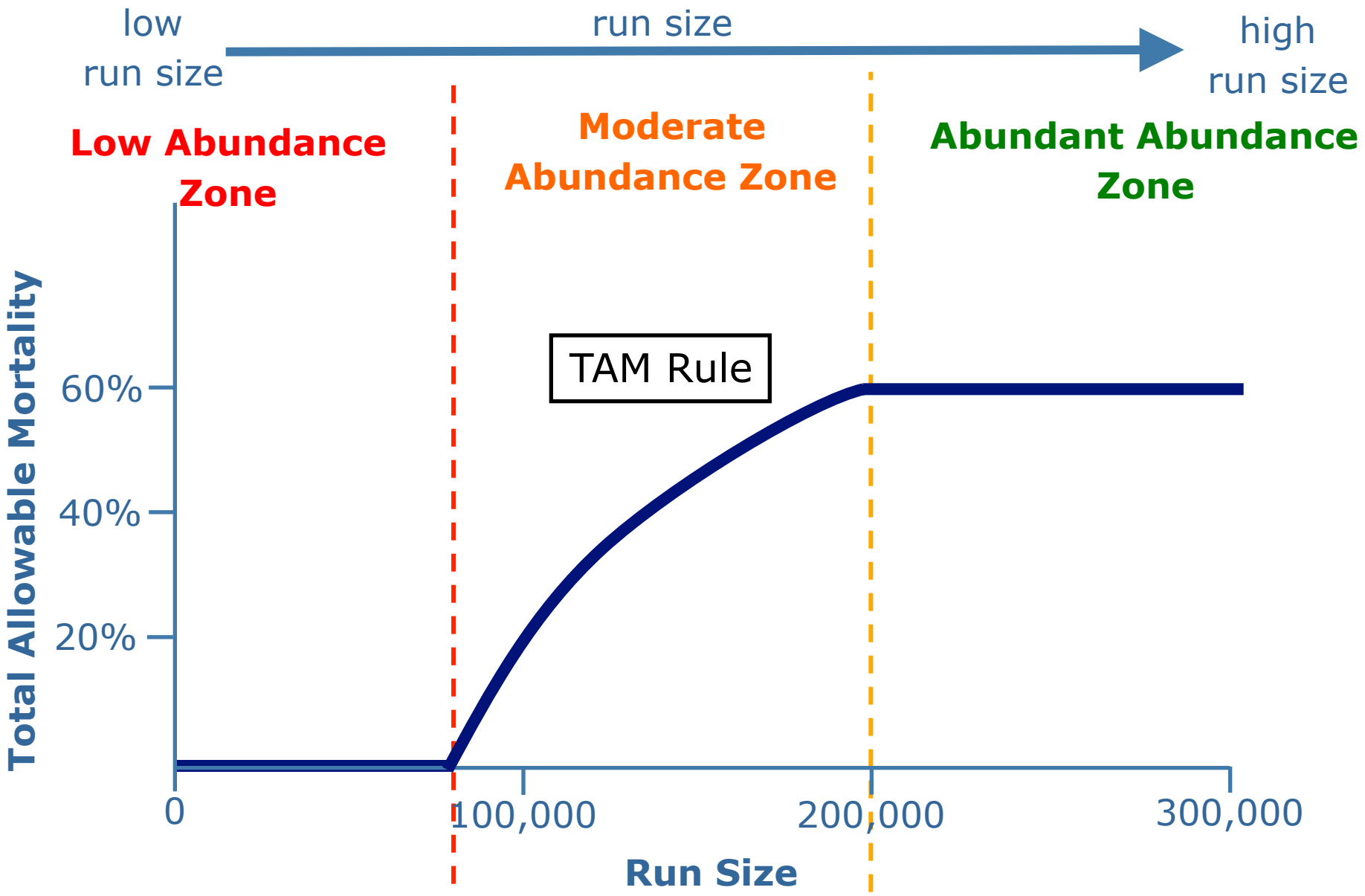
Moderate Abundance Zone

- spawning escapement target does NOT change with run size
- directed fisheries potentially occurring, depending on allowable ER
- exploitation rate will vary with run size (& management adjustments)

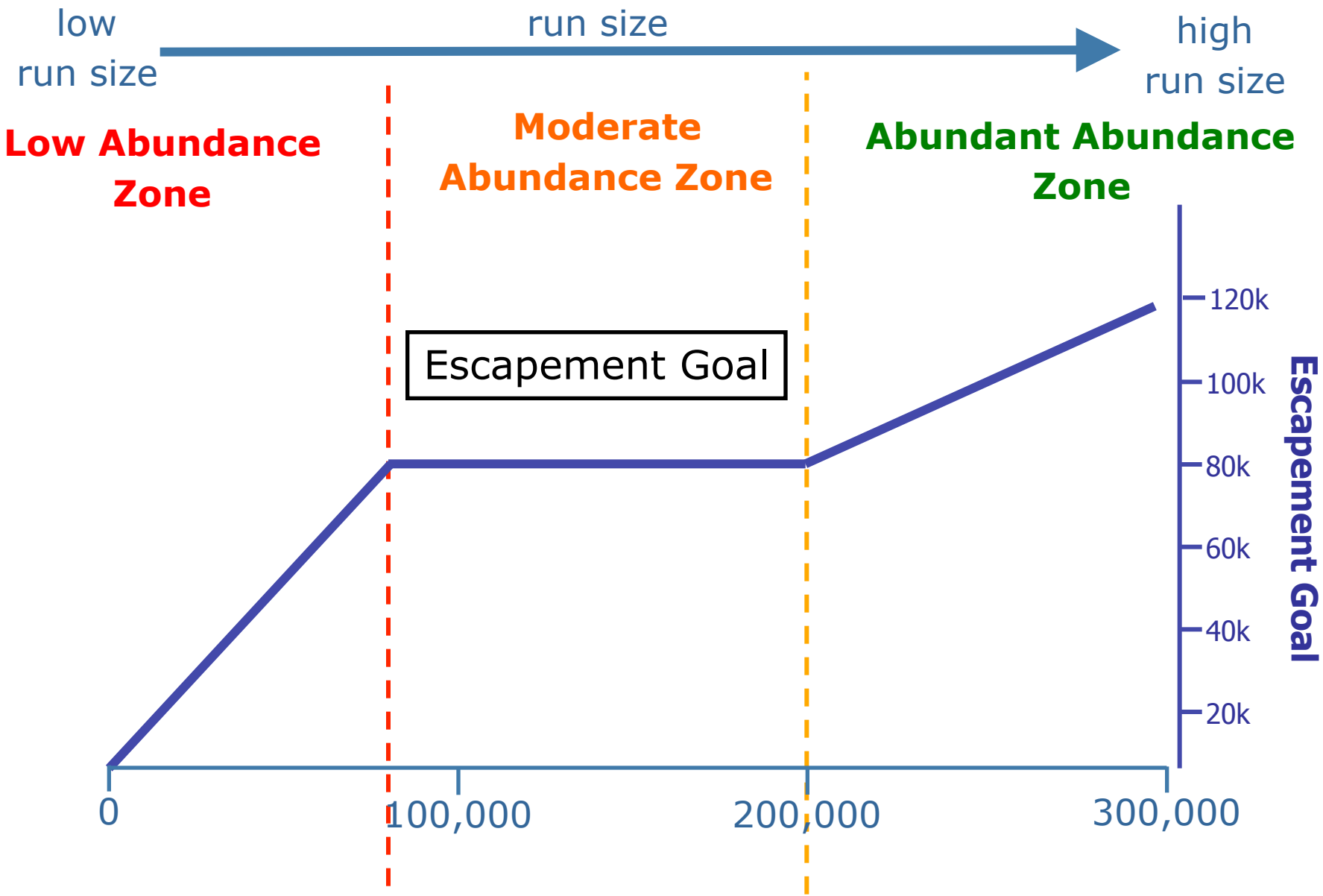
Abundant Abundance Zone

- spawning escapement target is fixed as a proportion of total run size
- directed fisheries likely occurring
- exploitation rate will vary with management adjustment (but not with run size)

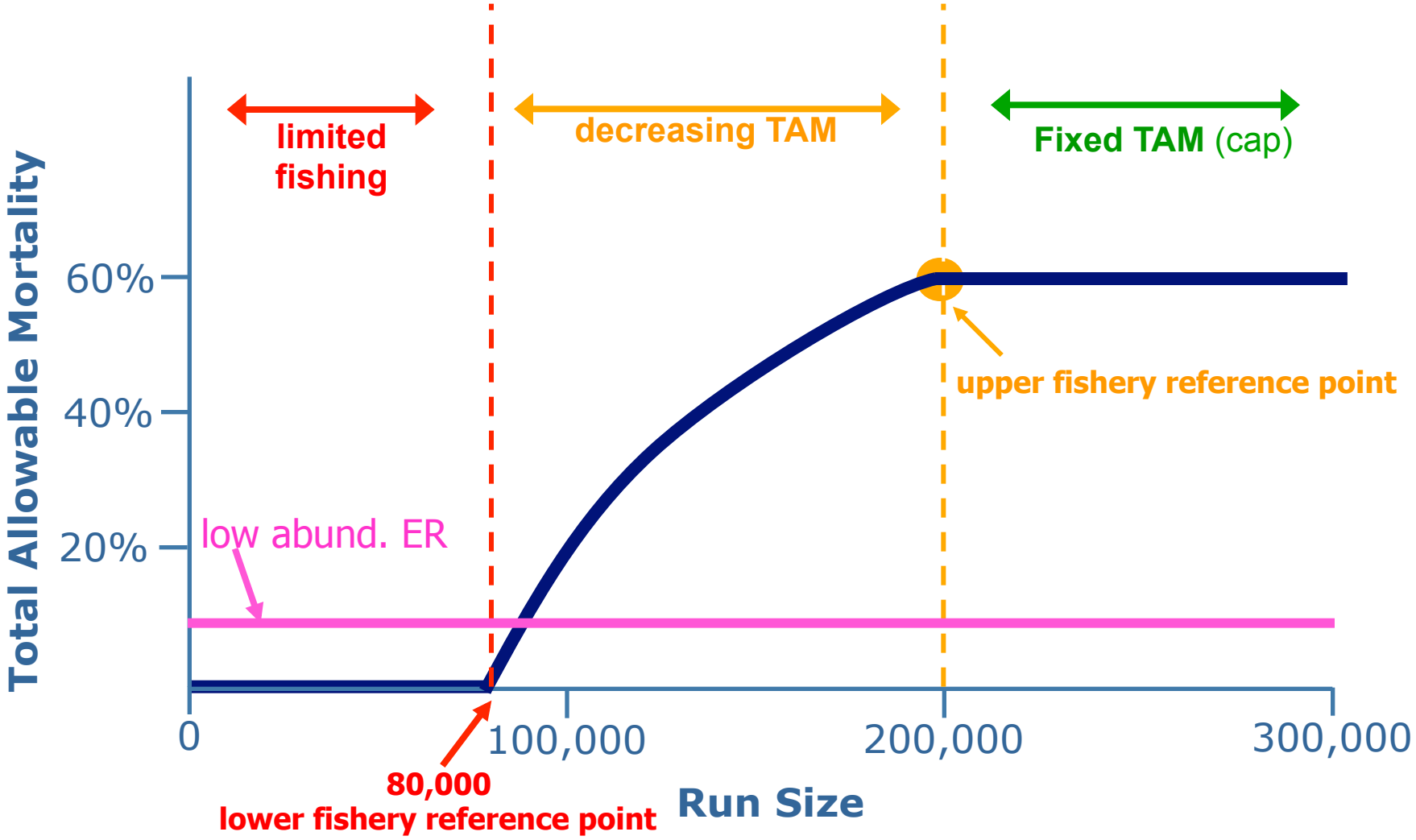
TAM Concepts



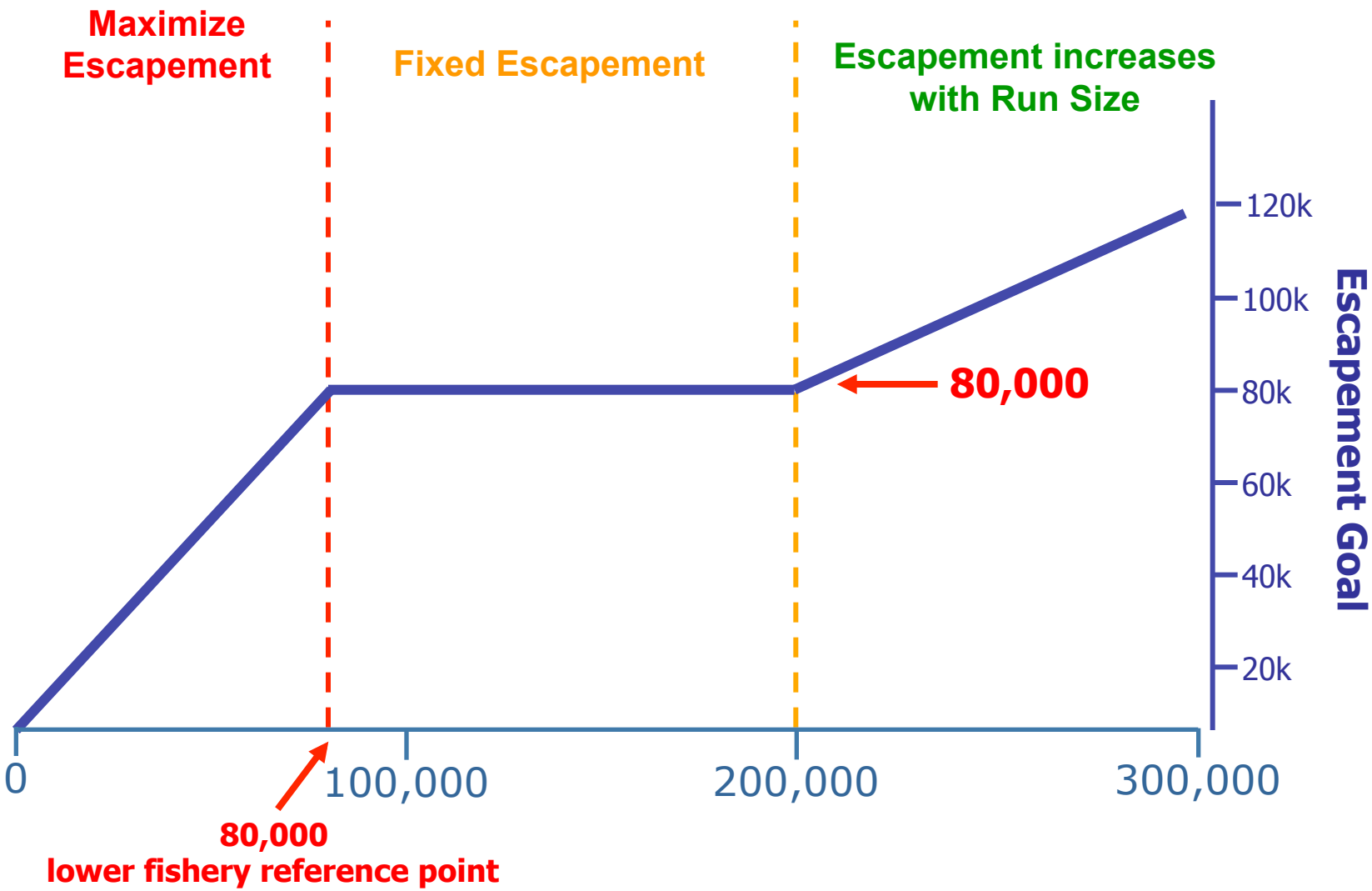
TAM Concepts



Sample TAM Rule



Sample TAM Rule



How to Read Escapement Scenario Table

2013 escapement scenario (LLY example)

Management Unit	Harvest Rule Parameters Low Abundance ER	TAM Cap	Lower Fishery Reference Point	Upper Fishery Reference Point	Pre-season pMA
Early Stuart	10%	60%	52,000	130,000	0.67
Early Summer (w/o misc)	10%	60%	100,000	250,000	0.51
Summer	10%	60%	640,000	1,600,000	0.10
Late (w/o misc)	20-30%	60%	300,000	750,000	1.00

2012 escapement scenario (example – without misc. stocks)

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
Early Stuart	forecast	92,000	137,000	**211,000**	331,000	507,000
	TAM Rule (%)	43%	60%	**60%**	60%	60%
	Escapement Target	52,000	54,800	**84,400**	132,400	202,800
	MA	34,800	36,700	**56,500**	88,700	135,900
	Esc. Target + MA	86,800	91,500	**140,900**	221,100	338,700
	LAER	10%	10%	**10%**	10%	10%
	ER at Return	6%	33%	**33%**	33%	33%
	Allowable ER	10%	33%	**33%**	33%	33%
	TAC	9,200	45,500	**70,100**	109,900	168,300
	2013 Performance					
	Projected S (after MA)	50,000	55,000	**84,000**	132,000	203,000
	BY Spawners	45,300	45,300	**45,300**	45,300	45,300
	Proj. S as % BY S	110%	121%	**185%**	291%	448%
	cycle avg S	210,300	210,300	**210,300**	210,300	210,300
	Proj. S as % cycle S	24%	26%	**40%**	63%	97%

Early Stuart	p50
forecast	211,000
TAM Rule (%)	60%
Escapement Target	84,400
MA	56,500
Esc. Target + MA	140,900
LAER	10%
ER at Return	33%
Allowable ER	33%
TAC	70,100

2013 Performance	
Projected S (after MA)	84,000
BY Spawners	45,300
Proj. S as % BY S	185%
cycle avg S	210,300
Proj. S as % cycle S	40%

2013 escapement scenario (LLY example – with misc. stocks)

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
Early Summer (w/o RNT)	*lower ref. pt. (w misc)*	141,000	141,000	141,000	141,000	141,000
	upper ref. pt. (w misc)	351,000	351,000	351,000	351,000	351,000
	forecast (incl. misc)	73,000	130,000	253,000	468,000	844,000
	TAM Rule (%)	0%	0%	**44%**	60%	60%
	Escapement Target	73,000	130,000	**141,000**	187,200	337,600
	MA	37,200	66,300	**71,900**	95,500	172,200
	Esc. Target + MA	110,200	196,300	**212,900**	282,700	509,800
	LAER	10%	10%	**10%**	10%	10%
	ER at Return	0%	0%	**16%**	40%	40%
	Allowable ER	10%	10%	**16%**	40%	40%
	TAC	7,300	13,000	**40,100**	185,300	334,200
	2013 Performance					
	Projected S (after MA)	44,000	77,000	**141,000**	187,000	338,000
	BY Spawners	80,200	80,200	**80,200**	80,200	80,200
	Proj. S as % BY S	55%	96%	**176%**	233%	421%
	cycle avg S	91,000	91,000	**91,000**	91,000	91,000
	Proj. S as % cycle S	48%	85%	**155%**	205%	371%

Early Summers	p50
lower ref. pt. (w misc)	141,000
upper ref. pt. (w misc)	351,000
forecast (incl. misc)	253,000
TAM Rule (%)	44%
Escapement Target	141,000
MA	71,900
Esc. Target + MA	212,900
LAER	10%
ER at Return	16%
Allowable ER	16%
TAC	40,100

2013 Performance	
Projected S (after MA)	141,000
BY Spawners	80,200
Proj. S as % BY S	176%
cycle avg S	91,000
Proj. S as % cycle S	155%

Fraser River Pink

	Pre-season Forecast Return				
	p10	p25	p50	p75	p90
forecast	4,794,000	6,401,000	8,926,000	12,473,000	17,111,000
escapement target	4,306,000	5,530,000	6,000,000	6,000,000	6,000,000
allowable ER	10%	14%	33%	52%	65%