

LMFF

Brown Trout

January 2017



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Pioneers of Innovation

- Respect for diverse opinions
- Common goal
- Creative, acknowledging constraints
- Collaboration versus confrontation
- Short and long-term vision
- Holistic view
- Conservation/management community



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Brown Trout

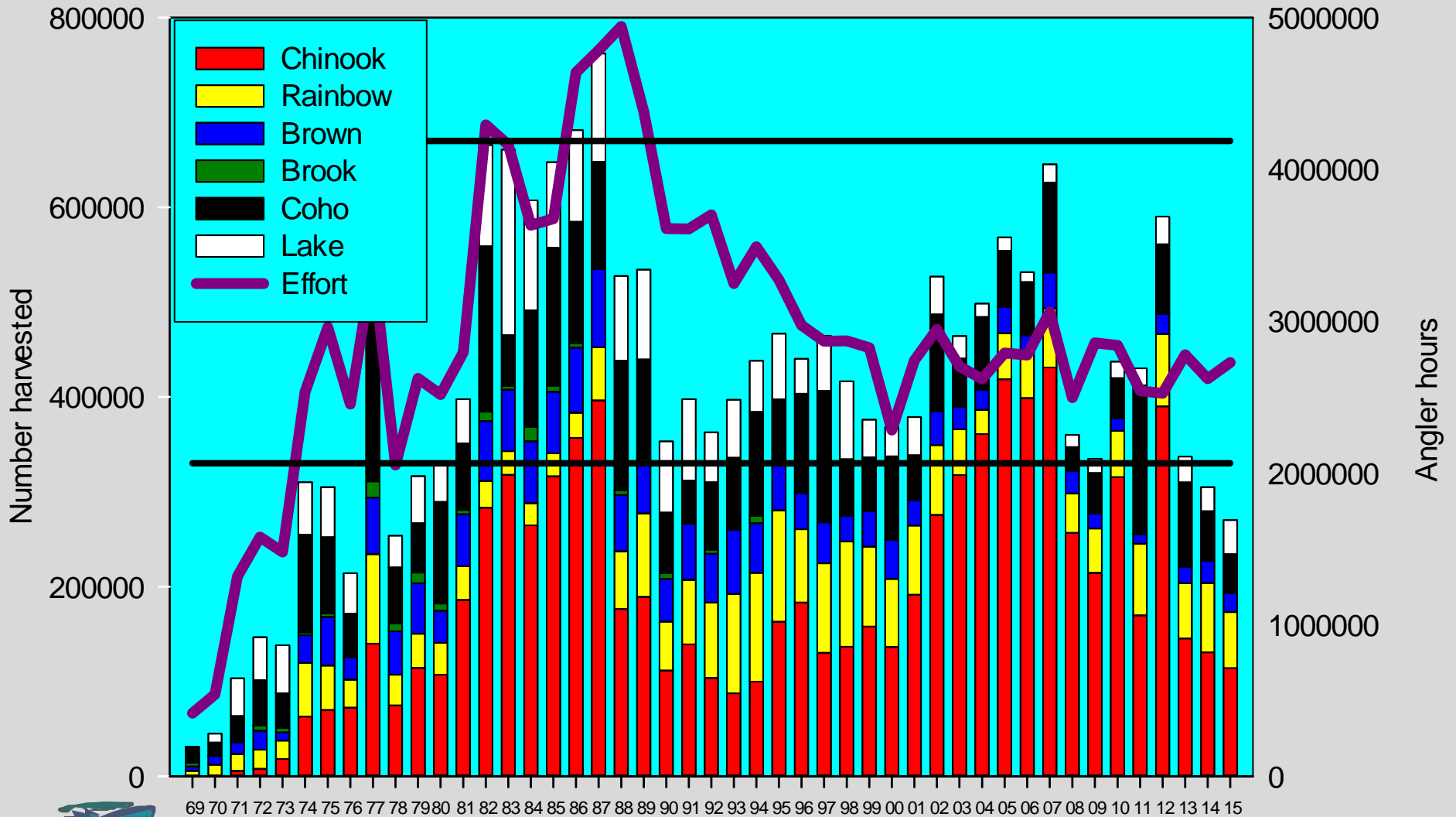
- Reduce 138,000 brown trout fingerlings
- Reduce 200,000 brown trout yearlings
- Maintain 320,000 seeforellen yearlings
- Decommission of Thunder River Rearing station
- Fewer brown trout will open space within our Fish Hatchery system to raise more steelhead until Kettle Moraine gets built



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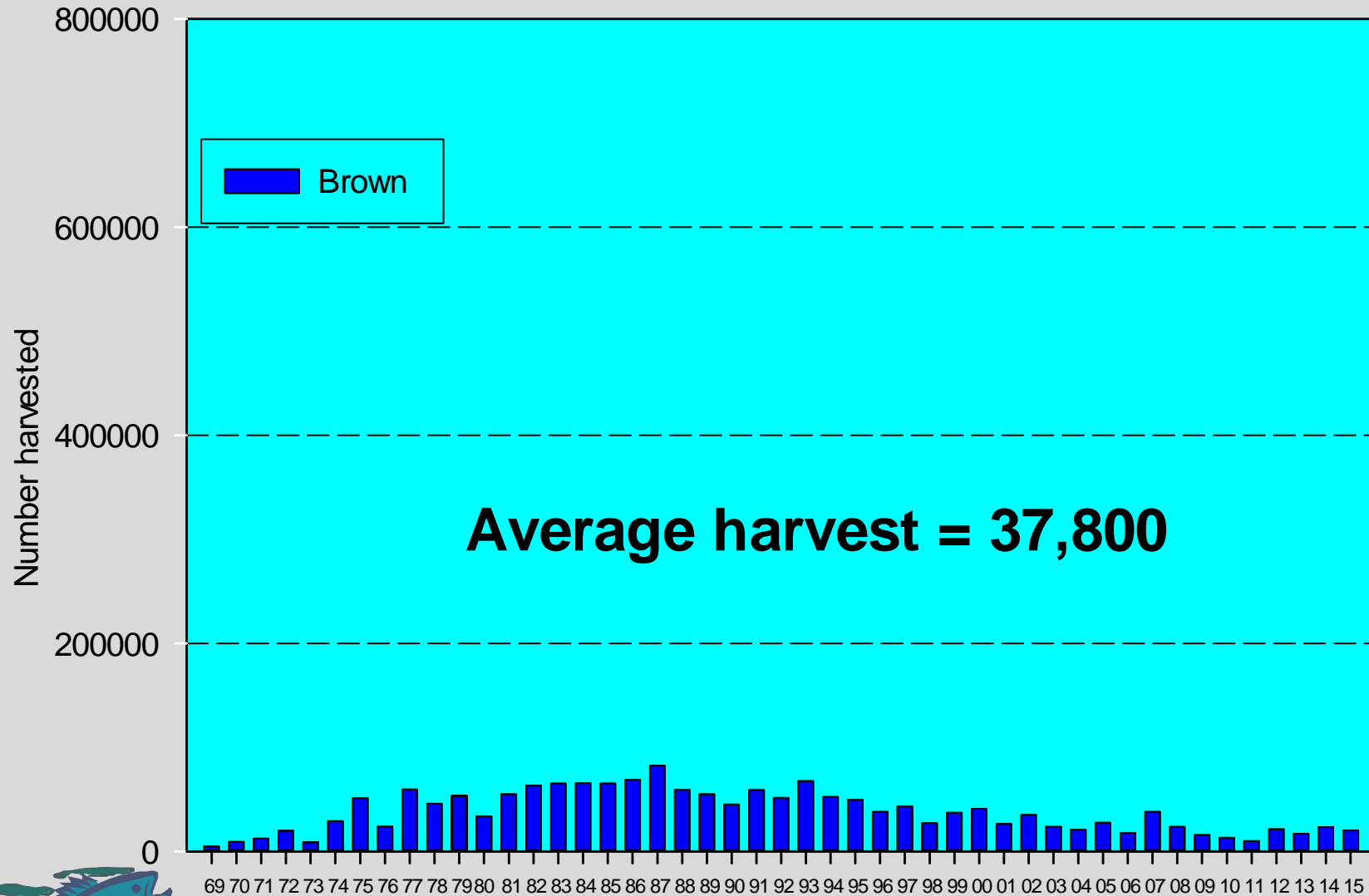
Lake Michigan Salmon and Trout harvest and effort from 1969 to 2015



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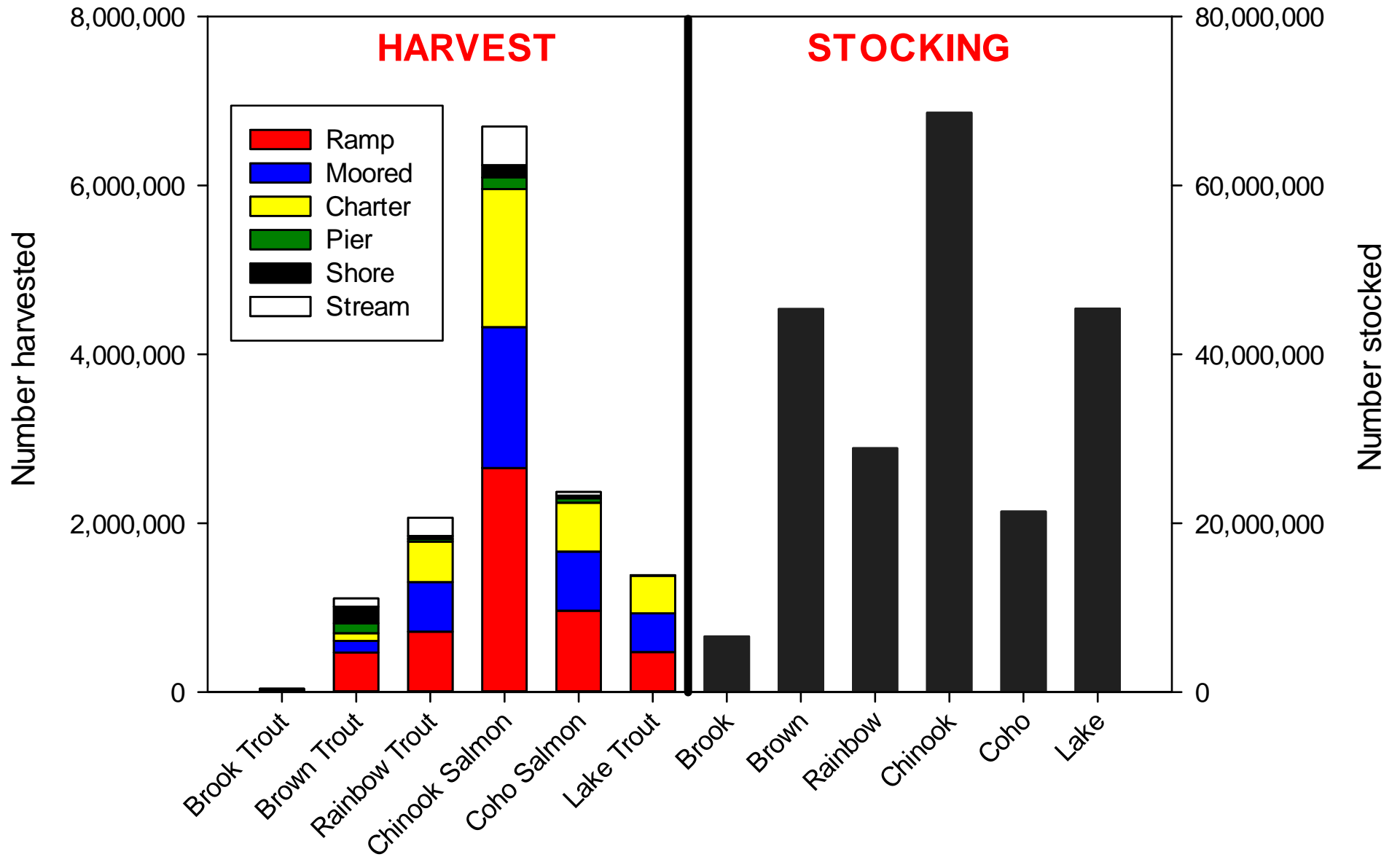
Lake Michigan Brown trout harvest from 1969 to 2015



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Lake Michigan Salmon and Trout harvest and stocking from 1969 to 2015



Brown Trout Fall Fingerlings Stocking numbers for 2016

Kenosha	34,535
Racine	37,597
Milwaukee	60,589
Ozaukee	30,174
Sheboygan	31,358
Manitowoc	64,964
Kewaunee	44,879
Door	58,919
Oconto	10,412
Marinette	58,267
Total	431,964



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Harvest rates for brown trout are low

- General harvest rate
 - 12.59 hours for chinook
 - 34.7 hours for coho
 - 40.6 hours for steelhead
 - 152 hours for brown trout
- Species Specific harvest rate
 - 9.75 hours for chinook
 - 15.7 hours for coho
 - 23.2 hours for steelhead
 - 40.8 hours for brown trout



Return to creel

- Return to creel which is the rate that anglers harvest stocked brown trout is well under 1%. So for every 100 fish stocked anglers harvest less than 1.



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Salmon and Trout Comparisons

	Averaged annual Lake Michigan stocking numbers and averaged annual harvest from 2010-2015 (assumes all yearlings, except for chinook)		Annual estimated cost to raise and stock based on average stocking numbers
Species	Stocked	Harvested	Cost
Chinook	997,743	210,901	\$199,548
Lake trout	776,273	25,458	Federal program
Brown trout	716,452	17,482	\$874,071
Coho	444,136	75,929	\$541,845
Rainbow	420,943	65,178	\$513,550



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QUESTIONS



Brown Trout stocking strategy

- Options for 2017
 - Status Quo for 2017
 - Create updated stocking strategy
- Options for 2018
 - Create updated stocking strategy
- Strategy
 - Use chinook salmon strategy as template
 - Other methods



Brown Trout stocking strategy

- What model should be used in the future to stock brown trout?

1) Develop a economic based model

- 2 to 4 years, \$500,000+

2) Develop a new model

- 1 to 2 years, 1500 hours staff time

3) Use Past stocking allocation model with updated information

- 1 to 2 years, 1000 hours staff time

4) Develop simpler allocation strategy spreadsheet

- 3 to 4 months, 200 hours staff time

5) Use status quo and continue stocking as we have since 1990

- Continue to implement as we have since 1990

Hardest

Easiest



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Brown Trout updated stocking strategy

- Creel survey parameters
 - Angling hours
 - Harvest of browns
 - Harvest rate of browns
 - Catch
 - Catch rate
 - Directed effort
- Charter survey parameters
 - Angling hours
 - Harvest



Brown Trout updated stocking strategy

- Additional parameters
 - Number of stream miles
 - Acres of harbor
 - Shoreline miles

Must have parameter available for each county

- Seasonality of fishery
- Forage base
- Access (launch/pier/Marina/river)



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Brown Trout updated stocking strategy

- Creel survey parameters
 - ~~Angling hours~~
 - ~~Harvest of browns~~
 - ~~Harvest rate of browns~~
 - ~~Catch~~
 - ~~Catch rate~~
 - **Directed effort**
- Charter survey parameters
 - ~~Angling hours~~
 - ~~Harvest~~



Brown Trout updated stocking strategy

- Additional parameters
 - ~~Number of stream miles~~
 - ~~Acres of harbor~~
 - ~~Shoreline miles~~
 - **Species Specific harvest rate / number stocked by county (yearling)**
- LMFF and others
 - ~~Tournament/contest~~
 - ~~Seasonality of fishery~~
 - **Forage base**
 - ~~Access (launch/pier/Marina/river)~~
 - ~~Creel (how to address bias) – addressed in LMIFMP~~



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Brown Trout updated stocking strategy

- SEASON
 - March – October
- FISHERY TYPES
 - Creel survey – ramp, pier shore and stream
- PARAMETERS
 - Directed effort – brown trout only
 - Species Specific harvest rate / number stocked by county (yearlings)



Wisconsin DNR Brown Trout Stocking Plans

Brown Trout	Number to Stock
Wisconsin 2017 Quota	316,000
Total number to be stocked	316,000
Number of counties	11
Total number per county (75%)	21,545

Brown Trout Allocation Strategy

STEP 1

County	Directed Effort (2006-2015)	Species Specific Harvest Rate/Numbers stocked (2006-	Forage Fish Parameter	Criteria 4
Kenosha	57,640	0.4843		
Racine	54,679	0.4628		
Milwaukee	146,348	0.8521		
Ozaukee	87,208	0.6035		
Sheboygan	101,757	0.4077		
Manitowoc	49,800	0.4840		
Kewaunee	110,158	0.2110		
Door (Lake Michigan)	37,040	0.2693		
Green Bay (Door)	10,568	0.3507		
Green Bay (Oconto)	8,479	0.3507		
Green Bay (Marinette)	21,017	0.3507		
TOTAL	684,694	4.8267	-	-

STEP 2

County	Normalized Directed Effort	Normalized Harvest rate	Normalized Forage Fish	Normalized Criteria 4	Sum	Final Percentage
Kenosha	0.0842	0.1003			0.1845	0.0923
Racine	0.0799	0.0959			0.1757	0.0879
Milwaukee	0.2137	0.1765			0.3903	0.1951
Ozaukee	0.1274	0.1250			0.2524	0.1262
Sheboygan	0.0842				0.2331	0.1165
Manitowoc	0.0727	0.1003			0.1730	0.0865
Kewaunee	0.1609	0.0437			0.2046	0.1023
Door (Lake Michigan)	0.0541	0.0558			0.1099	0.0549
Green Bay (Door)	0.0154	0.0727			0.0881	0.0440
Green Bay (Oconto)	0.0124	0.0727			0.0850	0.0425
Green Bay (Marinette)	0.0307	0.0727			0.1034	0.0517
TOTAL	1	1	0	0	2	1

$$57,640 / 684,694 = 0.0842$$

Step 3

Strategy accounts for 25% of stocking

County	25%
Kenosha	7,289
Racine	6,942
Milwaukee	15,416
Ozaukee	9,969
Sheboygan	9,207
Manitowoc	6,834
Kewaunee	8,082
Door (Lake Michigan)	4,340
Green Bay (Door)	3,480
Green Bay (Oconto)	3,359
Green Bay (Marinette)	4,082
TOTAL	79,000

STEP 4

Reduction based on equal number per county

County	Base stocking number is 75% of total allotment	Strategy comprises 25% of stocking number	Stocking number per county	LMFT best professional judgement (fall fingerlings)	Total Stocking number per county
Kenosha	21,545	7,289	28,834		28,834
Racine	21,545	6,942	28,487		28,487
Milwaukee	21,545	15,416	36,961	20,000	56,961
Ozaukee	21,545	9,969	31,515		31,515
Sheboygan	21,545	9,207	30,752		30,752
Manitowoc	21,545	6,834	28,380		28,380
Kewaunee	21,545	8,082	29,627		29,627
Door (Lake Michigan)	21,545	4,340	25,886		25,886
Green Bay (Door)	21,545	3,480			
Green Bay (Oconto)	21,545	3,359			
Green Bay (Marinette)	21,545	4,082	75,557	20,000	95,557
TOTAL	237,000	79,000	316,000	40,000	356,000

STEP 4

Reduction based on equal number per county

County	Base stocking number is 75% of total allotment	Strategy comprises 25% of stocking number	Stocking number per county	LMFT best professional judgement (fall fingerlings)	Total Stocking number per county	Current Seeforellen Quotas
Kenosha	21,545	7,289	28,834		28,834	27,000
Racine	21,545	6,942	28,487		28,487	27,000
Milwaukee	21,545	15,416	36,961	20,000	56,961	27,000
Ozaukee	21,545	9,969	31,515		31,515	21,845
Sheboygan	21,545	9,207	30,752		30,752	21,845
Manitowoc	21,545	6,834	28,380		28,380	31,944
Kewaunee	21,545	8,082	29,627		29,627	41,000
Door (Lake Michigan)	21,545	4,340	25,886		25,886	42,000
Green Bay (Door)	21,545	3,480				
Green Bay (Oconto)	21,545	3,359				
Green Bay (Marinette)	21,545	4,082	75,557	20,000	95,557	76,000
TOTAL	237,000	79,000	316,000	40,000	356,000	315,634

Proposed Timeline for 2017 Seeforellen Stocking Allocation

Step 1

- Nov. 7, 2016 LMFF meeting
- Gathered initial stakeholder comments

Step 2

- December 1, 2016 LMFT meeting
- Discussion / Options to consider

Step 3

- Mid-December to mid-February - Continue discussions
- - **LMFF meeting January 26 at LTC from 6 to 9 pm**

Step 4

- Comment period until February 8, 2017 – phone, mail or email
- DNRLAKEMICHIGANPLAN@wisconsin.gov

Step 5

- Fish stocking to begin March 1, 2017



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DISCUSSION

