

COMMERCIAL MUSSEL HARVEST FROM ILLINOIS WATERS IN 1997

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1997 ILLINOIS MUSSEL SHELL HARVEST

During 1997 a total of 86,775 pounds of mussels was harvested by 111 licensed musselors in Illinois. The reported wholesale value of this harvest was \$147,335.35 for an average price per pound of \$1.70 (Calculated by dividing total value by total pounds harvested). This is the same average price per pound as was reported for Illinois in 1996. The average price per pound was \$.14 higher than 1995. The average price paid per pound for individual mussel species decreased from 1996 for washboards but increased for miscellaneous and threeridge. The calculated price per pound was the same for all mussels as a result of the larger percentage of valuable mussels in the total harvest. Although both buyers and harvesters verbally reported lower prices per pound during the season, the calculated price per pound remained the same as last year for all mussels. This was a result of a lower percentage of relic mussels and a slight increase in the percentage of more valuable washboard mussels in the total harvest in 1997. Relic mussels decreased from 22.1% to 8.5% of the total harvest. Washboard mussels increased from 51.9% to 56.5% of the total harvest.

Total harvest of all species decreased 80% (from 427,738 lbs. To 86,775 lbs.) and the value of the harvest decreased by more than \$578,192. The only areas open to commercial mussel harvest in 1996 was the Mississippi River and the Ohio River. Washboard mussels (Megalonias nervosa) were most heavily harvested with 49,005 pounds or 56.7% of the total harvest. The threeridge mussel (Amblema plicata) was second with 32,304 pounds or 37.2% of the total harvest. The remaining 5,466.5 pounds (6.3%) was miscellaneous species primarily consisting of maple leaf (Quadrula quadrula). Most of the harvest (91.5%) was composed of live and cooked out/cut out shells. Only 8.5% of the total harvest was relic shell. Live shell poundage includes the weight of the animal with no adjustment for the weight of the body (See Table 1).

The Illinois River was closed to commercial mussel harvest in 1994 due to the invasion of the zebra mussel (Dreissena polymorpha). Future status and perhaps survival of native mussels is threatened by this exotic species. Additional pressures of commercial harvest on native populations were deemed inappropriate in the face of the impacts of the zebra mussel. Future status of native mussel harvest in the Illinois River and any river where zebra mussel populations become established is unknown. Commercial mussel harvest regulations will undoubtedly be affected by the impacts of the zebra mussel on native mussel populations. Zebra mussels in the Mississippi River are a serious threat to the future of native mussels in this river.

Average prices paid per pound as reported by licensed buyers are compiled in Table 2. The washboard is the highest value shell followed by miscellaneous (primarily maple leaf), 3 inch threeridge and 2.75 inch threeridge, respectively. Cooked out/cut

Additional information is needed to manage the commercial harvest of this resource. Commercial harvest data alone does not provide adequate information to make sound management decisions. Although much information is known about reproductive processes and growth rates of individual species, information is lacking about population dynamics. Individual mussels of commercial species are long lived and slow growing. The washboard may take 25 years to reach the minimum 4 inch size limit. In addition washboards may only spawn successfully at intervals of several years. Recovery of depleted populations could take decades. An evaluation of mussel stocks and harvest impacts is needed to decide how to protect the mussel resource from over exploitation. Washboard mussels are particularly susceptible to over harvest due to their slow growth and apparent infrequent spawning success. Surveys conducted in the past 10 years show inadequate recruitment of washboard mussels. Closure of commercial harvest of this species may be necessary to protect the remaining sexually mature washboard mussels. This closure has been implemented for the 1998 season.

A harvest management plan should be written with the cooperation of adjoining states to identify parameters and regulations needed to allow commercial harvest of mussels on a sustained yield basis. One alternative which should be evaluated is harvest management by alternating areas open to harvest on a rotational basis with pools or sections of the river open one year and closed for a period of years.

TABLE 3. Reported weight (pounds) and value of commercially harvested mussel species from the Mississippi River by Pool, as reported by shell buyers in 1997.

Pool	Miscellaneous		Threeridge		Washboard		Total	
	Weight	Value	Weight	Value	Weight	Value	weight	value
12	43	\$60.40	322	\$322.00	485	\$1,063.25	850	\$1,445.65
13	1298	\$1,615.00	3299	\$2,934.00	3946	\$7,535.00	8543	\$12,084.00
14	861	\$985.00	1105	\$967.00	1233	\$2,405.00	3199	\$4,357.00
15	716	\$816.00	854	\$675.00	1181	\$2,529.00	2751	\$4,020.00
16	720	\$948.00	1231	\$1,189.00	4571	\$8,718.00	6522	\$10,855.00
17	17	\$23.00	211	\$198.00	766	\$1,828.00	994	\$2,049.00
18	287	\$315.60	908	\$780.00	3048	\$6,638.50	4243	\$7,734.10
19	706	\$960.60	13660	\$14,364.75	23106	\$56,671.50	37472	\$71,996.85
20	0	\$0.00	19	\$19.00	39	\$97.50	58	\$116.50
24	0	\$0.00	116	\$116.00	495	\$919.00	611	\$1,035.00
25	146	\$203.60	4005.5	\$2,848.80	2935	\$6,315.05	7087	\$9,367.45
26	501.5	\$588.10	5461.5	\$5,223.50	7199.5	\$15,668.20	13163	\$21,479.80
OPEN	171	\$239.00	1112	\$556.00	0	\$0.00	1283	\$795.00
Total	5466.5	\$6,754.30	32304	\$30,193.05	49005	\$110,388.00	86775	\$147,335.35

TABLE 5. Reported weight (pounds), percent by pool, and value of 3-inch threeridge shells purchased by Illinois resident and non-resident shell buyers from the navigation pools of the Mississippi River in 1997.

Pool	Cooked out/ cleaned out			Live			Relic			Total	
	Total Pounds	Percent of Pool Total	Value	Total Pounds	Percent of Pool Total	Value	Total Pounds	Percent of Pool Total	Value	Total Pounds	Total Value
12	322	100.0%	\$322.00	0	0.0%	\$0.00	0	0.00%	\$0.00	322	\$322.00
13	796	74.8%	\$796.00	268	25.2%	\$202.00	0	0.00%	\$0.00	1064	\$998.00
14	362	53.7%	\$362.00	312	46.3%	\$236.00	0	0.00%	\$0.00	674	\$598.00
15	100	13.9%	\$100.00	619	86.1%	\$473.00	0	0.00%	\$0.00	719	\$573.00
16	757	84.1%	\$757.00	143	15.9%	\$118.00	0	0.00%	\$0.00	900	\$875.00
17	156	73.9%	\$156.00	55	26.1%	\$42.00	0	0.00%	\$0.00	211	\$198.00
18	200	29.0%	\$200.00	490	71.0%	\$385.00	0	0.00%	\$0.00	690	\$585.00
19	5970	53.4%	\$6,584.75	5209	46.6%	\$4,674.00	0	0.00%	\$0.00	11179	\$11,258.75
20	19	100.0%	\$19.00	0	0.0%	\$0.00	0	0.00%	\$0.00	19	\$19.00
24	116	100.0%	\$116.00	0	0.0%	\$0.00	0	0.00%	\$0.00	116	\$116.00
25	2730	80.5%	\$2,349.00	0	0.0%	\$0.00	662.5	19.53%	\$255.80	3392.5	\$2,604.80
26	3838.5	85.3%	\$3,838.50	234	5.2%	\$234.00	428	9.51%	\$214.00	4501.5	\$4,286.50
Total	15366.5	64.6%	\$15,600.25	7330	30.8%	\$6,364.00	1090.5	4.58%	\$469.80	23788	\$22,434.05

TABLE 7. Reported weight (pounds) , percent by pool, and value of miscellaneous shells purchased by Illinois resident and non-resident shell buyers from the navigation pools of the Mississippi River in 1997.

Pool	Cooked out/ cleaned out			Live			Relic			Total	
	Total Pounds	Percent of Pool Total	Value	Total Pounds	Percent of Pool Total	Value	Total Pounds	Percent of Pool Total	Value	Total Pounds	Total Value
12	43	100.0%	\$60.40	0	0.0%	\$0.00	0	0.0%	\$0.00	43	\$60.40
13	1166	89.8%	\$1,524.00	38	2.9%	\$42.00	94	7.2%	\$49.00	1298	\$1,615.00
14	818	95.0%	\$963.00	0	0.0%	\$0.00	43	5.0%	\$22.00	861	\$985.00
15	707	98.7%	\$806.00	9	1.3%	\$10.00	0	0.0%	\$0.00	716	\$816.00
16	666	92.5%	\$895.00	42	5.8%	\$46.00	12	1.7%	\$7.00	720	\$948.00
17	17	100.0%	\$23.00	0	0.0%	\$0.00	0	0.0%	\$0.00	17	\$23.00
18	261	90.9%	\$300.60	0	0.0%	\$0.00	26	9.1%	\$15.00	287	\$315.60
19	517	73.2%	\$768.90	189	26.8%	\$191.70	0	0.0%	\$0.00	706	\$960.60
25	146	100.0%	\$203.60	0	0.0%	\$0.00	0	0.0%	\$0.00	146	\$203.60
26	501.5	100.0%	\$588.10	0	0.0%	\$0.00	0	0.0%	\$0.00	501.5	\$588.10
OPEN	171	100.0%	\$239.00	0	0.0%	\$0.00	0	0.0%	\$0.00	171	\$239.00
Total	5013.5	91.7%	\$6,371.60	278	5.1%	\$289.70	175	3.2%	\$93.00	5466.5	\$6,754.30

Table 9. Weight and value of the mussel harvest from the Illinois and Mississippi Rivers from 1963-1997.

Year	Illinois River		Mississippi River		Average Price Paid per pound
	Pounds of Mussel Shells	Dollar* Value of Mussel Shells	Pounds of Mussel Shells	Dollar* Value of Mussel Shells	
1963	900000	\$22,500			\$0.03
1964	730000	\$18,000			\$0.02
1965	2318000	\$75,335	362000	\$11,765	\$0.03
1966	2236000	\$109,461	2489200	\$130,806	\$0.05
1967	776960	\$38,848	1148800	\$66,870	\$0.05
1968	186000	\$8,000			\$0.04
1969	663000	\$43,000	545600		\$0.04
1970	54000	\$4,000			\$0.07
1971					
1972			550000	\$56,875	\$0.10
1973					
1974	160000	\$16,000	427600	\$42,760	\$0.10
1975	440000	\$39,431	299600	\$26,849	\$0.09
1976	160400	\$21,170	943000	\$122,901	\$0.13
1977	576000	\$79,289	1170000	\$157,334	\$0.14
1978	220200	\$34,823	1396400	\$223,637	\$0.16
1979	24800	\$3,667	1540400	\$231,060	\$0.15
1980	167200	\$23,489	1699000	\$237,760	\$0.14
1981	265600	\$43,913	2333400	\$372,468	\$0.16
1982	481400	\$95,502	683600	\$112,802	\$0.18
1983	666400	\$160,980	1603000	\$292,620	\$0.20
1984	1325340	\$339,379	1209260	\$198,847	\$0.21
1985	1462240	\$402,452	2464640	\$576,199	\$0.25
1986	409064	\$134,199	2283380	\$514,415	\$0.24
1987	369465	\$130,728	1862958	\$600,260	\$0.33
1988	361958	\$123,267	1825366	\$687,997	\$0.37
1989	585081	\$321,074	2302332	\$1,196,346	\$0.53
1990	1080032	\$1,001,991	2162171	\$1,883,829	\$0.89
1991	1194940	\$1,475,446	1336900	\$1,605,158	\$1.22
1992	693174	\$650,698	307633	\$161,166	\$0.81
1993	149516	\$146,922	33144	\$21,292	\$0.92
1994			346444	\$298,128	\$0.86
1995**			1157048	\$1,803,316	\$1.56
1996			427738	\$725,528	\$1.70
1997			86775	\$147,335.35	\$1.70
annual ave	666313	\$198,699	1206807	\$431,253	\$0.34

* Value determined by average price per ton paid by shell buyers

** 1995 data corrected in 1996 with addition of late buyer reports received in 1996

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