

STRENGTHENING THE PUBLIC TRUST: MANAGEMENT EFFECTIVENESS OF STATE FISH & WILDLIFE



TO: Caroline Pinckney, South Carolina Department of Natural Resources

FROM: Terra Rentz, SUNY College of Environmental Science and Forestry

DATE: June 21, 2018

Subject: Employee perception survey results regarding agency management effectiveness (October 2016)

We provide the following information as an interim report on the state-specific summary results for the Management Effectiveness Project (MEP). The MEP is a nation-wide, voluntary effort to assess the management effectiveness of state fish and wildlife agencies. Specifically, this effort defines metrics of organizational effectiveness pertinent to fish and wildlife agencies and assesses those metrics using a survey tool focused on evaluating employee perceptions regarding 22 factors thought to promote agency effectiveness in terms of organizational function (Table 1).

Background

In 1992, South Carolina Department of Natural Resources: Division of Wildlife and Freshwater Fisheries (SCDNR) was among nine state fish and wildlife agencies deemed to be the most effective agencies nation-wide to participate in the MEP. More recently, in fall 2016, SCDNR was among a cohort of 22 states to participate in a contemporary iteration of the MEP. The purpose of this contemporary analysis was twofold: (1) to provide a current assessment of for individual state agencies for internal efforts to improve agency management effectiveness; and (2) to illuminate shared strengths and areas for targeted improvement consistent across multiple state agencies to support future policy and management actions.

Purpose

The information gathered in this research supports the completion of graduate work at SUNY College of Environmental Science and Forestry in Syracuse, NY and utilized by the Association of Fish and Wildlife Agency's Management Assistance Team to assess future training and resource needs.

Status

The complete results of this study are not yet available, and individual state results will only be made available to participating agencies. As such, the results herein should be viewed as interim findings and will be supplemented later with a more robust analysis and comparative information.

Findings

The following results are the product an employee surveys conducted with South Carolina Department of Natural Resources in 1992 and October 2016 designed to assess an individual's perception on the effectiveness of their state fish and wildlife agency. Individual statements within the questionnaire serve as indicators for 20 composite effectiveness factors that influence agency management effectiveness. Employees responded to each statement using a 5-point scale ranging from strongly disagree (1) to strongly agree (5). These identical surveys were completed, on average, by 61 employees in 1992 (n_{1992}) and 208 employees in 2016 (n_{2016}) randomly selected from a representative cross section of agency personnel.

Within a survey phase, composite scores were calculated across multi-item indicators for each of the 22 effectiveness factors, setting Cronbach's alpha 0.65 as the threshold for acceptance with respect to the reliability and variance among indicators within a composite score. This allowed the aggregation of questions to produce a single score for specific factors (Table 2). In all but three instances, the majority of questions could be used as multi-item indicators for their associated composite effectiveness factor. Those that could not be aggregated were evaluated independently (Table 4).

In general, employee perceptions have remained stable within the state agency since 1991. Most composite factors produced a mean score at or above neutral (3.00) indicating that, in general, the staff have a more positive perception regarding the effectiveness of the agency. However, seven composite factors had a statistically significant change since 1991, with employee perceptions declining for six factors (inverse response for one), and increasing for one factor (leadership ability of agency managers) (Table 3). As seen in Table 2, these changes are consistent with trends noticed nationwide and may illuminate areas to highlight as agency successes or to focus targeted efforts to identify specific barriers or strategies for growth.

Question specific findings for all elements of the employee survey will be made available with final reporting and should serve as a useful tool for isolating specific elements for additional investigation by agency leadership.

Demographics

Overall, this study received robust participating between survey phases by nearly 50%R of all state fish and wildlife agencies. For SCDNR, a minimum sample was exceeded in 2016 that accurately captures the programmatic diversity of the agency.

As with other agencies, demographic shifts are showing a shift in employee composition both in gender (increased representation of women) and cohort age (increased cohort age). Results of those findings and specific subunit participation ratios are available in Tables 5 – 9. As a point of comparison, national results have been provided to garner a greater understanding where SCDNR stands in relation to peer agencies.

Conclusions

As noted previously, this information should only be viewed as an interim status report and should not be readily reproduced for outside publication. Upon completion of a full nationwide analyses, final results will be provided to the agency for internal use as seen fit.

All information provided by respondents is confidential and the anonymity of specific respondents has been preserved to ensure the highest quality responses.

Author

Terra Rentz is a graduate researcher at the SUNY College of Environmental Science and Forestry, a public administration professional in the natural resources arena, and the former Deputy Director of Government Affairs with The Wildlife Society. Presently, Terra is located in Olympia, Washington with the Washington Department of Fish and Wildlife and can be contacted via email (terra.rentz@dfw.wa.gov) or phone (360-902-2555) for specific questions or additional detail.

TABLES AND RESULTS

Table 1. Factors, and the associated factor groups, that influence state fish and wildlife agency management as determined by agency leadership and policy makes in 1991.

Factor Group	Effectiveness Factor
I - Public support & awareness	(a) Openness to public input (b) Public support and satisfaction with the agency (<i>not included</i>) (c) Public awareness of agency programs
II - Conflict resolution	(a) Ability to resolve issues before conflicts arise (b) Ability to resolve conflicts without appeal or override (c) Public perception of fairness in resource allocation
III - Politics	(a) Agency credibility with the legislative & executive branches (b) Sensitivity to politics <ul style="list-style-type: none"> (i) Political interference (ii) Political leadership (c) Relationships with other agencies
IV - Planning and funding	(a) Adaptability and innovation in response to change (b) Monitoring of societal trends, looks towards the future (c) Management system links planning and budgeting (d) Amount, diversity and stability of funding <ul style="list-style-type: none"> (i) General Funding (ii) Nontraditional Funding
V - Agency management	(a) Leadership and management skills of leaders (b) Participatory decision making (c) Teamwork within the agency (d) Internal communication
VI - Personnel	(a) Employee morale (b) Definition of personnel roles (c) Public and personnel understanding of agency mission (d) Employee recognition and rewards
VII - None	(a) Status of animal populations and habitat

Table 2. Composite factor scores for indicators of organizational effectiveness resulting from an evaluation of Cronbach's alpha ($\alpha \geq 0.70$) for internal consistency between multi-item indicators over two survey periods (historic – 1992, 1995; contemporary – 2016); where N is the number of items within each factor, \bar{X} is the mean composite score at the Agency unit of measurement, and \bar{x} is the mean composite score at the employee unit of measurement.

Composite Factors	N	α	Agency Unit				Employee Unit			
			Historic		Contemp.		Historic		Contemp.	
			\bar{X}	SD	\bar{X}	SD	\bar{x}	SD	\bar{x}	SD
Openness to public input	4	0.806	3.44	0.242	3.26	0.146	3.43	0.237	3.27	0.119
Ability to resolve issues before conflicts arise	3	0.705	3.46	0.231	3.55	0.170	3.44	0.195	3.56	0.166
Public perception of fairness in resource allocation & conflict resolution	3	0.842	2.91	0.316	2.93	0.226	2.90	0.303	2.91	0.222
Credibility w/ legislative & executive branches	3	0.842	3.44	0.611	3.42	0.288	3.44	0.552	3.42	0.272
Sensitivity to Politics	6	0.767	3.56	0.372	3.34	0.167	3.47	0.267	3.32	0.165
Political interference in management	3	0.815	2.27	0.396	2.61	0.195	2.40	0.888	2.64	0.831
Political leadership & respect of agency	3	0.793	3.39	0.429	3.29	0.231	3.35	0.759	3.30	0.759
Relationships w/ other agencies	3	0.804	3.71	0.278	3.75	0.211	3.69	0.247	3.74	0.193
Adaptability & innovation in response to change	4	0.720	2.78	0.381	2.82	0.256	2.81	0.335	2.82	0.252
Monitoring of societal trends, looks towards the future	2	0.719	3.07	0.467	3.10	0.266	3.00	0.430	3.10	0.267
Management system linking planning & budgeting	10	0.901	2.96	0.288	2.99	0.184	2.90	0.271	2.99	0.190
Leadership & management skills of agency leaders	6	0.807	3.07	0.321	3.23	0.254	3.10	0.307	3.24	0.227
Participatory decision making	2	0.864	3.18	0.337	3.05	0.226	3.18	0.324	3.04	0.208
Teamwork within the agency	4	0.739	3.24	0.217	3.12	0.187	3.24	0.210	3.11	0.186
Internal communication	6	0.857	3.15	0.276	3.04	0.250	3.12	0.237	3.03	0.240
Employee morale	1	---	2.98	0.539	2.99	0.375	3.04	0.472	3.02	0.367
Definition of personnel roles	4	0.704	3.25	0.293	3.18	0.181	3.18	0.285	3.19	0.169
Public & personnel understanding of agency mission	2	0.787	3.98	0.263	4.11	0.116	3.87	0.310	4.14	0.110
Employee recognition & reward	4	0.776	2.61	0.358	2.56	0.253	2.68	0.331	2.60	0.229

Table 3. Results of independent sample t-test used to quantify the change in employee perceptions over time by comparing the average (mean employee response in 1992 to 2016; where n is the number of responses received, \bar{x} is the mean composite score, and SD is the standard deviation around the mean. Statistically significant changes ($\alpha < 0.05$) in employee perceptions were found in seven of 21 factors (¥), five of which reflect declining employee perceptions (Δ).

Composite Factor	1992			2016			α	Δ
	n	\bar{x}	SD	n	\bar{x}	SD		
Openness to public input¥	55	3.511	0.432	168	3.348	0.489	0.021	↓
Public awareness of agency programs	---	---	---	130	3.623	0.900	---	
Ability to resolve issues before conflicts arise	56	3.524	0.702	143	3.539	0.740	0.896	
Ability to resolve conflicts without appeal or override	52	3.190	0.427	142	3.087	0.460	0.151	
Public perception of fairness in resource allocation	48	3.076	0.639	145	2.977	0.711	0.366	
Agency credibility with legislative & executive branches¥	60	4.122	0.613	143	3.744	0.751	0.000	↓
Sensitivity to politics								
Political interference in management*¥	56	2.423	0.721	145	3.143	0.917	0.000	↑
Political leadership & respect of agency¥	56	3.827	0.589	144	3.458	0.729	0.000	↓
Relationship with other agencies	60	3.956	0.473	144	3.799	0.694	0.111	
Adaptability and innovation in response to change	57	3.000	0.575	136	2.930	0.705	0.474	
Monitoring of societal trends, looks towards the future	58	2.888	0.932	138	3.073	0.893	0.203	
Management system links planning and budgeting	57	2.744	0.702	133	2.920	0.737	0.120	
Leadership and management skills of leaders¥	53	2.937	0.632	129	3.254	0.802	0.005	↑
Participatory decision making	60	3.242	0.799	130	3.046	1.044	0.200	
Teamwork within the agency¥	56	3.415	0.581	129	3.045	0.763	0.000	↓
Internal communication¥	60	3.461	0.542	130	3.240	0.700	0.032	↓
Employee morale	60	3.000	1.008	132	3.227	1.052	0.156	
Definition of personnel roles	53	3.392	0.666	129	3.223	0.723	0.133	
Public and personnel understanding of agency mission	60	4.017	0.657	132	4.167	0.619	0.139	
Employee recognition and reward	60	2.500	0.898	132	2.693	0.962	0.179	
Status of animal populations and habitat	---	---	---	128	3.753	0.579	---	

* Questions are negatively coded. Lower scores reflect a lower perception of sensitivity to political interference.

Table 4. Results of independent sample t-test for specific questions that could not be aggregated into composite factors. Comparison used to quantify the change in employee perceptions over time by comparing the average (mean) employee response in 1992 to 2016; where n is the number of responses received, \bar{x} is the mean composite score, and SD is the standard deviation around the mean. Statistically significant changes ($\alpha < 0.05$) in employee perceptions were found in three separate questions regarding openness, funding, and internal communication (¥).

Evaluation Questions	1992			2016			α	Δ
	n	\bar{X}	SD	n	\bar{X}	SD		
<i>Openness to public input</i>								
(Q10) Attaining use or harvest goals is usually more important than public opinion when the agency makes resource management decisions.	57	3.25	1.005	172	3.27	1.015	0.858	
(Q11) The agency usually tries to “sell” resource management decisions to the public. ¥	59	3.998	0.682	172	3.31	0.826	<0.001	↓
(Q13) Public opinion is usually as important as biological information when the agency makes resource management decisions.	59	2.95	1.007	171	3.05	0.996	0.497	
<i>Amount, diversity and stability of funding</i>								
(Q56) My budget is adequate to achieve the objectives to which I am responsible ¥	57	2.82	1.088	137	3.18	1.113	0.041	↑
(Q57) The agency’s budget is adequate to achieve its mission.	58	2.47	1.080	137	2.39	1.053	0.672	
(Q58) Nontraditional sources provide a dependable, continuous part of the agency’s funds.	58	2.88	0.957	137	3.03	0.954	0.319	
(Q59) The agency needs to increase the amount of nontraditional funds in the budget.	57	3.79	0.725	137	3.72	0.727	0.518	
<i>Leadership & management skills of agency leaders</i>								
(Q64) I keep up with literature and theory relevant to the major duties of my current position.	60	3.93	0.686	130	3.82	0.814	0.332	
(Q65) Agency leaders spend most of their time dealing with whatever crisis erupts.	60	3.60	0.942	129	3.49	0.928	0.448	
(Q67) Agency leaders and managers are primarily task oriented.	56	3.39	0.779	129	3.42	0.740	0.558	
<i>Internal communication</i>								
(Q77) Agency leaders need to visit field stations more often ¥	56	4.02	0.904	129	3.65	0.965	0.015	↓

Table 5. Proportion of respondents by Division or Subunit in 1992 and 2016 for South Carolina DNR; subsequent proportional change in each category over time. Subunit classifications were self-selected; 2016 survey consisted of a higher diversity of organizational subunits as selection options, reducing the likelihood of an “other” classification.

Organizational Subunit	1992	2016	%Δ
Director’s Office/Senior Personnel	1.6%	4.8%	66.7%
Law Enforcement	24.6%	29.8%	17.4%
Fisheries	9.8%	23.6%	58.5%
Wildlife	13.1%	18.8%	30.3%
Information, Education & Outreach	18.0%	4.8%	-275.0%
Administrative	11.5%	12.0%	4.2%
Habitat	n/a	0.5%	---
Research	n/a	1.9%	---
Other Services	21.3%	3.8%	-460.5%

Table 6. Proportion of respondents by age in 1990’s (1992 and 1995) and 2016 for national participation and participation with South Carolina DNR; subsequent proportional change in each age category over time.

Age Range	National			SCDNR		
	1990s	2016	%Δ	1992	2016	%Δ
18 to 24	0.4%	1.4%	71.4%	1.7%	0.0%	---
25 to 34	12.9%	18.4%	29.9%	8.3%	19.3%	57.0%
35 to 44	40.4%	27.5%	-46.9%	45.0%	26.3%	-71.1%
45 to 54	37.1%	29.8%	-24.5%	36.7%	34.2%	-7.3%
55 to 64	8.6%	21.0%	59.1%	8.3%	16.7%	50.3%
65 to 74	0.6%	1.8%	66.7%	0.0%	3.5%	---
75 or older	0.0%	0.1%	100%	0.0%	0.0%	0.0%

Table 7. Proportion of respondents by gender in the 1990’s (1992 and 1995) and 2016 for national participation and participation with South Carolina DNR; subsequent proportional change in each age category over time.

Gender	National			SCDNR		
	1990s	2016	%Δ	1992	2016	%Δ
Female	11.3%	25.3%	55.3%	13.1%	18.4%	28.8%
Male	88.7%	74.4%	-19.2%	86.9%	81.6%	-6.5%
Other	n/a	0.3%	---	n/s	0.0%	0.0%

Table 8. Proportion of respondents across six service categories for number of years in one's current position within the agency in the 1990's (1992 and 1995) and 2016 for national participation and participation with South Carolina DNR; subsequent proportional change in each service category over time.

Years in current position	National			SCDNR		
	1990s	2016	%Δ	1992	2016	%Δ
Less than 1 year	4.4%	10.5%	58.1%	3.4%	5.8%	41.4%
1 to 5 years	38.5%	36.7%	-4.9%	35.6%	39.2%	9.2%
6 to 10 years	25.5%	21.3%	-19.7%	22.0%	30.8%	28.6%
11 to 15 years	15.2%	14.3%	-6.3%	20.3%	12.5%	-62.4%
16 to 20 years	8.7%	7.5%	-16.0%	15.3%	5.8%	-163.8%
More than 20 years	7.8%	9.7%	19.6%	3.4%	5.8%	41.4%

Table 9. Proportion of respondents across six service categories for number of years working for the agency in the 1990's (1992 and 1995) and 2016 for national participation and participation with South Carolina DNR; subsequent proportional change in each service category over time.

Years with the agency	National			SCDNR		
	1990s	2016	%Δ	1992	2016	%Δ
Less than 1 year	0.7%	3.9%	82.1%	3.4%	5.8%	41.4%
1 to 5 years	13.1%	20.8%	37.0%	35.6%	39.2%	9.2%
6 to 10 years	16.1%	16.3%	1.2%	22.0%	30.8%	28.6%
11 to 15 years	18.1%	17.2%	-5.2%	20.3%	12.5%	-62.4%
16 to 20 years	20.2%	13.3%	-51.9%	15.3%	5.8%	-163.8%
More than 20 years	31.7%	28.6%	-10.8%	3.4%	5.8%	41.4%