



Workshop Assessment

CONSERVATION LEADERS FOR TOMORROW

2012-16 Workshop Survey Analysis
Revised February 2019

Prepared by DJ Case & Associates



Contents

Foreword by Dr. Zachary Lowe, Conservation Leaders for Tomorrow Program Director	3
Executive Summary	4
Survey design and process.....	5
Demographic overview.....	5
Results Chain - CLfT Objectives	6
Objective 1: “Right” participants are selected	7
Objectives 2: Workshop is a safe and open environment.....	9
Objective 3: Participants establish a trusting rapport and relationship with instructors for the duration of the workshop	10
Objective 4: Initial outcomes	13
Objective 4.2: Participants are familiar with hunting skills, knowledge, and techniques	21
Objective 4.3: Participants are familiar with historic role of hunters and conservation.....	22
Final Objective 4: Participants are familiar with ethical dilemmas that hunters grapple with.....	23
Objective 5: Participants are better prepared to be agency employees	24
Objective 6: Participants apply knowledge about hunting and conservation in their professional and personal life	25
Appendix A: Results Chain Model.....	28
Appendix B: Objective 4 - T-Statistics	29
Appendix C: Objective 3 - Curriculum Assessment	30
Appendix D: Perceived Knowledge Movement	32
Appendix F: Student Workshop Assessment.....	41

Foreword

by Dr. Zachary Lowe, Conservation Leaders for Tomorrow Program Director

Since 2005, Conservation Leaders for Tomorrow (CLfT) has been breaking new ground by delivering highly-effective workshops for the professional development of top state and federal wildlife agency staff and university students. The primary objective of CLfT is to identify current and future leaders of the natural resource profession who do not hunt and provide them with an understanding of the diverse and important roles hunters and the consumptive use of wildlife play in conservation.

The CLfT workshops to date – more than 125 in all – have served about 2,000 participants. They represented more than 50 universities and 42 state and federal agencies, and come from diverse career paths (biological, legal, marketing, legislative, education, administrative, communications, and law enforcement).

Graduates of CLfT workshops leave with a high degree of understanding of hunting, the complexity of hunting cultures, and an awareness of how to better engage the hunting constituency as they make policy and management decisions. Some participants become hunters. Many never hunt again. All leave with a greater understanding of the personal motivations of hunters and professional importance of their activities as they relate to wildlife conservation.

CLfT is addressing a critical void in the professional development of those who are given the responsibility for developing wildlife policy and managing our natural resources. The results have been transformative as reported by alumni, participating state and federal agencies, and the wildlife profession. This report summarizes the analysis of four years of workshop exit surveys from agency professionals who attended CLfT. These findings provide an important benchmark of success for CLfT and will shape our future planning and program outcomes.



“Texas Parks and Wildlife Dept. has had the enviable opportunity to send more than 25 staff to CLfT workshops over the past 5 years. Without exception, each has returned from their workshop with a fresh informed perspective on how their job within the department fits into the broader agency mission - You won’t find a more rewarding investment for the money.”

- Carter Smith, Director, Texas Parks and Wildlife Department

Executive Summary

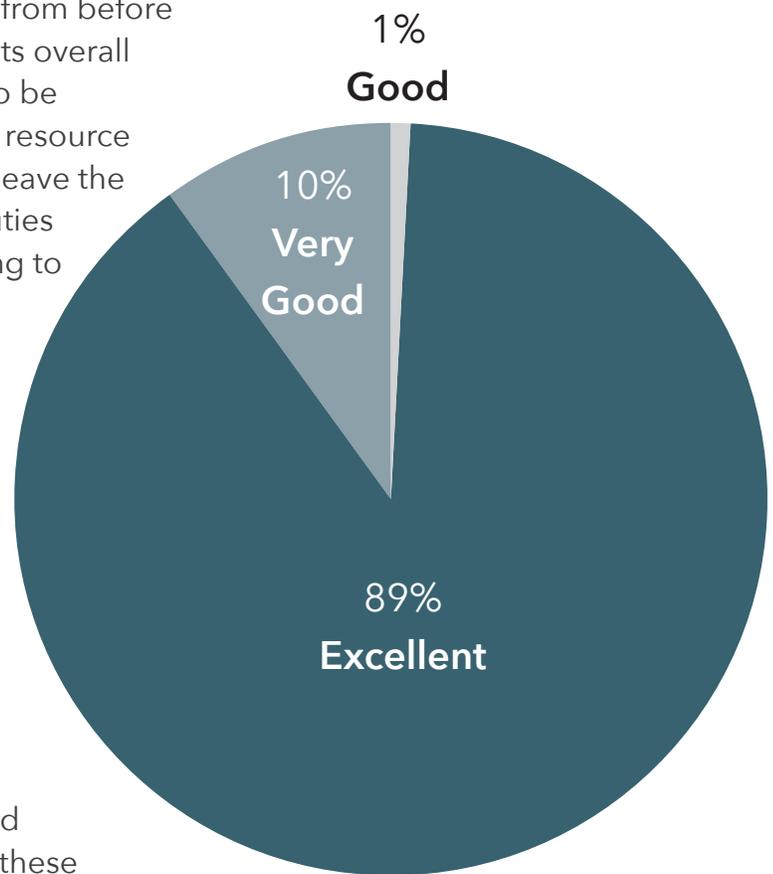
Conservation Leaders for Tomorrow contracted DJ Case and Associates (DJ Case) to assess the impact of conservation professional development workshops on participants. CLfT provided DJ Case with data including pre- and post- workshop surveys collected over the last four years. CLfT also provided the Results Chain model (see Appendix A) used in the construction of the surveys and in understanding of workshop impact on participants over time.

This report focuses on confidential exit survey data from agency professionals who attended CLfT workshops from fall of 2012 to spring of 2016, which comprises 345 participants.¹

Participants report overwhelmingly that they enjoyed and learned a great deal from the CLfT workshops. They report enormous gains in knowledge on a range of topics relevant to hunting, fishing, and trapping. Because of the workshops, they now understand how those activities impact conservation of lands and species. Participants' understanding of the importance of hunting to conservation increases significantly ($p=.0001$) from before to after the workshop. Furthermore, participants overall find the activities provided at the workshops to be highly informative. Finally, as these are natural resource professionals, it is important to note that they leave the workshops feeling better able to fulfill their duties with state, federal and private agencies working to support the conservation of wildlife.

This report uses the Results Chain model as the foundation to understand the movement of program participants from interested or even somewhat skeptical of hunting, fishing and trapping to supporters and at times even advocates for these activities as they relate to conservation efforts across the country.

Regardless of how the data are analyzed, results overwhelmingly show that the CLfT workshops have a significant impact on the knowledge and attitudes of participants toward hunting, fishing, and trapping, and the role of these activities for conservation. Next steps will be to create a follow-up survey to understand if these incredibly positive post-workshop findings are maintained and if they influence agency professionals in their day-to-day work.



Agency professionals, overall CLfT experience results (n=326)

¹Appendix F provides the student workshop assessment in its entirety. Student workshop assessment results are nearly identical to the professional results. They are overwhelmingly positive.

Survey design and process

Recognizing the importance of measuring impact, CLfT conducts a series of surveys with workshop participants. Surveys were developed and reviewed by multiple third-parties to verify quality. Great efforts were made to ensure that these surveys were well designed and provided a scientifically-valid assessment of the program's perceived impacts, quality of instruction, and satisfaction among participants. These confidential surveys are designed to understand participants as they come to the workshops and to understand how the workshops themselves impact views and opinions of participants on hunting, fishing, and trapping.

The pre-workshop survey is used to collect the demographics of participants as well as their personal and professional experiences with hunting, fishing, and trapping. In addition, participants' views on hunting in particular and how it relates to conservation are measured. The post-workshop survey seeks to understand both satisfaction with the workshop experience as well as impact of the workshop on views and opinions of hunting, fishing, and trapping. In addition, there are a few questions that are asked on both the pre- and post-workshop surveys for direct comparison of immediate workshop impact.

The post-workshop survey produces primarily quantitative data but does include open-ended questions and qualitative data. The quantitative questions allow for repeated measures and the collection of 122 data points from each workshop participant. The qualitative responses help identify themes and attitudinal impacts of the program and enrich the understanding of the individual's workshop experience.

All survey results are ensured to be confidential, in that results are only presented in aggregate. CLfT staff use initials to match post-workshop surveys to the pre-workshop survey and then code the data so that identifying information is not connected to any responses during the analysis and reporting stage.²

Finally, to further understand workshop impact, in 2017 CLfT will administer a follow up survey to be sent to participants who took part in a workshop within the last 2 to 5 years. This survey will be matched to previous data collected on each respondent and will help CLfT to track potential longer-term impacts of the workshops on natural resource professionals.

Demographic overview

This report represents the responses of 345 workshop participants. The average age of participants was 38. Of those with data available, 65 were men and 135 were women. On average, these individuals have been working for their current employer for 6.5 years with a range of 1 to 26 years of service. We used these socio-demographic variables to look for patterns in the survey responses. Using tests such as ANOVA, t-tests, and linear regressions, we did not find any of the demographics to be correlated with any variability in the data. This is likely due to the fact that there is not much variability in the survey responses, suggesting that the workshop experience is largely the same regardless of age, gender, or years spent within the agency.

²All student assessment survey data collection and analysis followed the same design process.

Results presented here demonstrate the positive views participants have of the CLfT workshops. The report is designed to elucidate each step in the CLfT results chain (Appendix A) and demonstrates impact of the workshop on views of hunting, fishing, and trapping. The follow-up survey, which will be distributed in 2017, will help CLfT understand longer term impacts of the workshops on these resource professionals.

Results Chain - CLfT Objectives

CLfT's Results Chain model (see Appendix A) specifies objectives for the program. This assessment focuses on progress toward and levels of success in achieving these objectives.

Objective 1

- The "right" participants are selected

Objective 2

- Workshops are safe and open environments

Objective 3

- Participants establish a trusting rapport and relationship with the instructors for the duration of the workshop

Objective 4 - Initial Outcomes

- 4.1 - Participants are familiar with conservation, economic and environmental benefits of hunting
- 4.2 - Participants are familiar with hunting skills, knowledge, techniques
- 4.3 - Participants are familiar with the historic role of hunters and conservation
- 4.4 - Participants are familiar with the social role of hunters and hunting
- Final Objective 4 - Participants are familiar with ethical dilemmas that hunters grapple with

Objective 5

- Participants are better prepared to be agency employees

Objective 6

- Participants apply knowledge about hunting and conservation in their professional and personal life

Objective 1: “Right” participants are selected

Analysis: For these analyses we used questions from *Participant information sheet* including: Have you ever shot a firearm? Have you ever had a hunting experience? How many times? Was your experience as someone who tagged along or the hunter? From the *Pre-workshop survey* questions 1, 2, 3, 4, 5, 7 and 8 were used.

Results:

The results all suggest that the “right” people are coming to the workshops. They have some interest or are peripheral to hunting but are not avid hunters. Furthermore, hunting and fishing are salient in their lives. Participants seem less familiar with trapping.

187 participants (out of 211 who responded to this question) said they had shot a firearm before coming to the workshop and 24 said they had not. Furthermore, of the 85 who said they had hunted before the workshop (125 said they had not), 38 had only tagged along (did not hunt) and only 16 had hunted more than five times, demonstrating that the vast majority are not avid hunters but have the interest needed to both professionally and personally grow during the workshop.

Though experience with hunting itself is low, hunting is something that participants are talking about with other professional colleagues. Over 68% of respondents (n=312) said that they have discussed hunting with their professional colleagues more than five times over the last 12 months. Fewer (36%) said they discussed hunting with their friends five or more times, and only 28% discussed hunting with their family five or more times over the last 12 months.

About 50% of resource professionals have immediate family members who hunt and 50% do not. However, many do have friends that hunt and fish, while few have friends who trap (Table 1).

Finally, it is important to note that participants are not afraid of or vehemently opposed to hunting and firearms. Only 27 (out of 311) came into the workshop uncomfortable with firearms and only 15 (out of 312) thought hunting was unsafe before the workshop. Later in this report, we look more closely at these participants to see how the workshop impacted these attitudes.

Table 1: Report of participants for friends who hunt, fish and trap

235/310	Friends who hunt
272/309	Friends who fish
52/214	Friends who trap

Survey response excerpts for objective 1

“Single best workshop I have attended in my 25-year working career. Instructors were passionate but not in our face they valued your opinions. Participants were great and engaged the entire time very much done.”

Diversity Officer-Human Resources, Southern US

“Thank you to the instructors for being patient and understanding of my shyness and almost fear of firearms. It definitely helps to handle the firearms often. I appreciate the opportunity. At my agency, we have many people that are nominated to attend CLfT but only a few can go. I’ve been trying to attend for the last 2 1/2 years.”

Terrestrial Biologist, Western US

“Excellent program that is a necessary tool in helping those in conservation related fields understand the broad-spectrum of things at play related to issues within their field. I would be happy to help any way I can through a communications standpoint, whether professionally or personally.”

Public Affairs Manager and Policy/Communications, Midwest US



“CPW sends its future leaders to CLfT with the goal that they return with a solid understanding of hunting, fishing, trapping and our traditional constituency. We’ve been paid in spades! CLfT provides that understanding. It also stirs the emotions and passions that our sportspeople hold, making our staff more relatable and effective.”

- Bob Broscheid, Director, Colorado Parks and Wildlife

Objectives 2: Workshop is a safe and open environment

Analysis: For these analyses we used questions 1, 2, and 3 from the *Post-workshop survey*.

Results:

Overwhelmingly people felt safe, comfortable and supported in their learning at the CLfT workshops.

Out of 345 survey respondents:

- 327 said they felt very safe and 11 said they felt somewhat safe
- 256 felt comfortable to ask questions always, 63 felt that way most of the time and 7 felt that way only some of the time or rarely
- 290 said they always received adequate feedback and 48 said they received adequate feedback most of the time

Survey response excerpts for objective 2

“The workshop was an excellent experience and one I will not soon forget. The instructors were excellent and I am leaving with a greater understanding and appreciation for hunting. Having never hunter or handled a firearm before, the workshop also provided me with a new experience in a safe and comfortable setting. I had heard great things about the program and am now convinced that what I heard is true.”

Financial Specialist, Midwest US

“The instructors’ diversity of academics, resource management, etc. was great for me to relate with. I enjoyed being able to talk about complex issues and have educated discussions that challenge me with a backing of education.”

Wildlife Biologist, Midwest US

Objective 3: Participants establish a trusting rapport and relationship with instructors for the duration of the workshop

While the surveys did not contain any direct questions about views on the instructors themselves, results from related questions point to the instructors being highly qualified and establishing good rapport with the participants.

Analysis: Questions 4, 5, 6, 10, 13, and 16 on the *post-workshop survey* provide some insight into participants' views of the instructors. Here we make the reasonable assumption that gaining a deeper understanding of content of the roundtables, technical presentations, and field exercises is the result of good instructors.

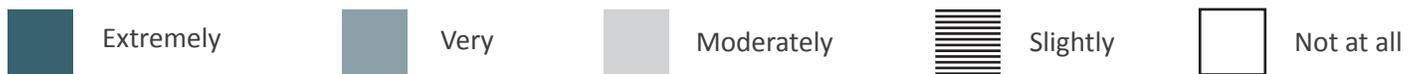
Results:

All results in this section point to high quality instructors that students feel comfortable with and from whom they seem to learn a lot. Looking more closely at each workshop independently, workshop content seems to be consistently delivered and received.

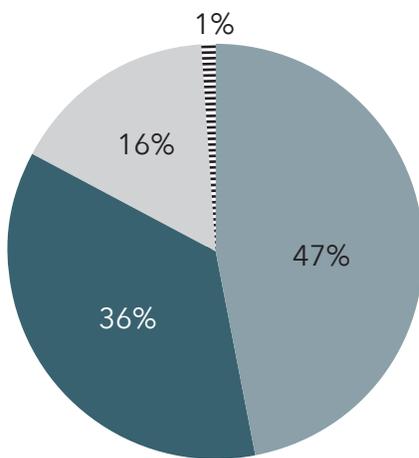
Overall, nearly everyone stated that the workshop provided them with an opportunity to understand the personal and professional motivations of hunters and provided them with opportunities to interact with hunters.

Roundtable assessment

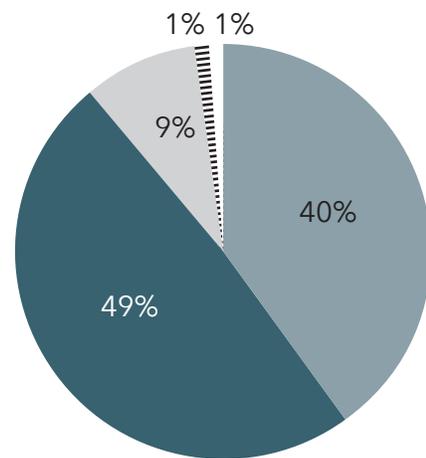
Looking more deeply at satisfaction with the workshops, participants were highly satisfied with all of the roundtables. The following graphs look specifically at how informative participants rated the materials presented in each of the roundtables.

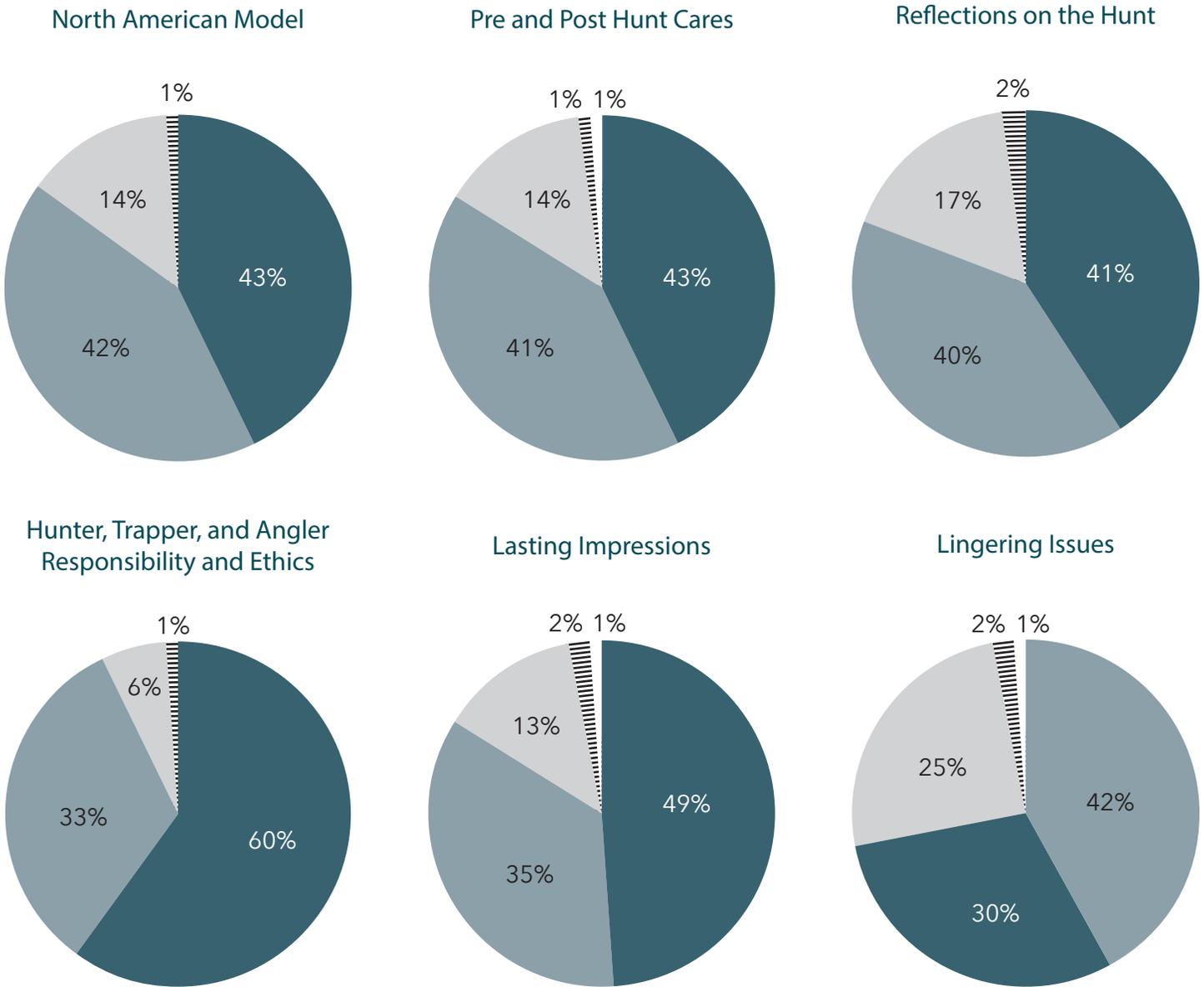
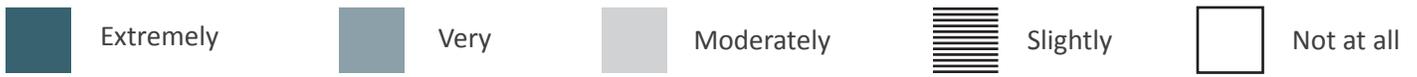


Wildlife Laws and Regulations



The Role of Hunting, Trapping, and Angling in Society





Overall, relatively few participants ranked roundtables as Moderately, Slightly or Not at all informative.

Consistency of workshops is very important to CLfT. Similar to the roundtables, participants consistently found the technical presentations and field exercises to be informative. To assure consistency in the content and delivery of roundtables, technical presentations and field exercises we also looked at total number of participants who ranked either of these three groupings of activities as slightly or not at all informative (see Appendix C). **The results demonstrate that overall participant reception of the delivery of content is consistent across workshops.**

Survey response excerpts for objective 3

“Thank you! Each instructor was an amazing and personable person. They were perfect for introducing those of us who were unsure to the hunting culture. Wonderful and respectable people!”

Fish and Wildlife Biologist/Grants Manager, Eastern US

“I enjoyed every single instructor and appreciated the wide variety of instructors. It was so great to see all of us become more comfortable with each other. You do make a difference and I saw it in many of the people who attended. Thank you!”

Park Ranger, Western US

“This was fantastic! The instructors are amazing and they truly made the difference in this being a positive experience for me. Thank you!”

Clean Water Specialist, Midwest US

“Words are not enough here. This experience was incredibly amazing. I’m so blessed to have had this opportunity and have been taught by such truly wonderful, experienced instructors.”

Landscape Ecology Analyst, Southern US



“It helped raise my awareness of a group that I don’t necessarily interact with regularly but most of my decisions as a natural resource professional affect.”

- Charisa Morris, Chief of Staff, USFWS

Objective 4: Initial outcomes

Analysis: For these analyses we looked at the 24 items under question 19 in the *Post-workshop survey*.

Results:

Overwhelmingly, participants perceive that they learn a lot at the CLfT workshops. All of the pre-post knowledge perceptions increased significantly at the $p < 0.001$ level.

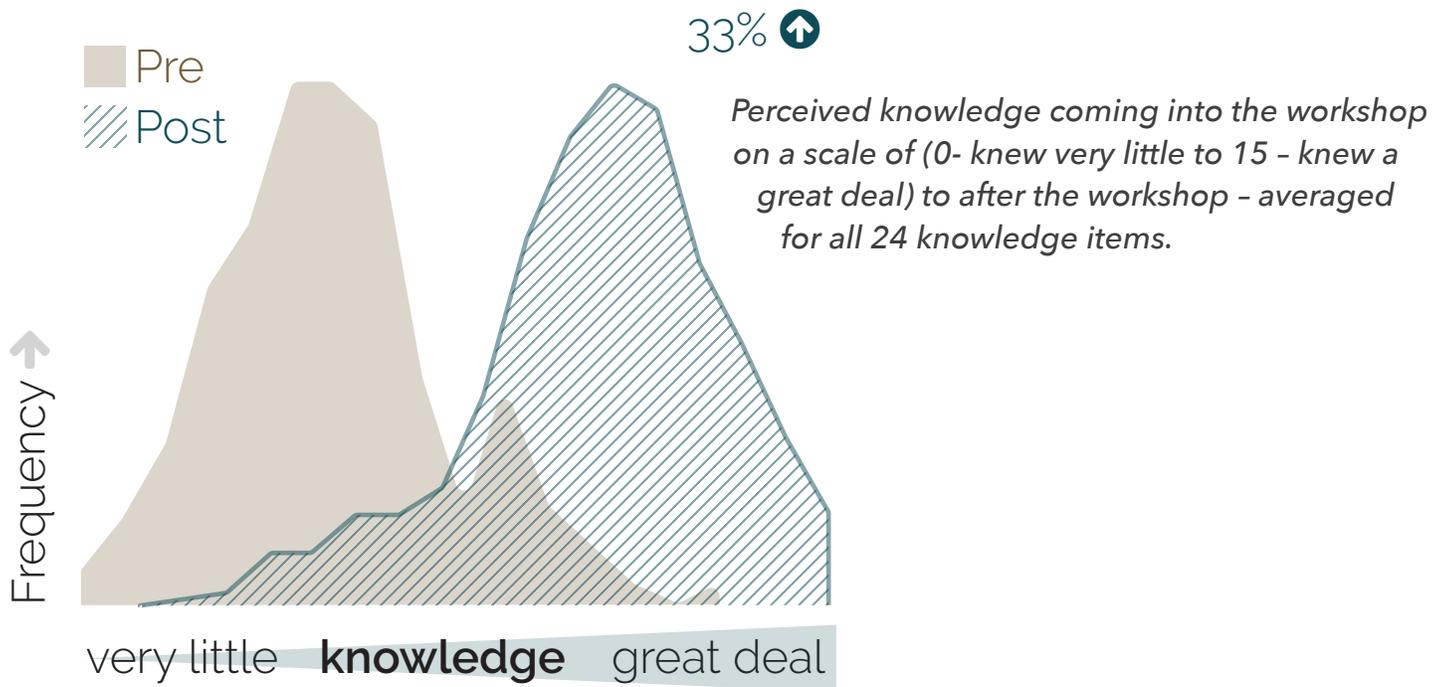
Each statement on question 19 could range from 0 (knew very little) to 15 (knew a great deal). Participants were asked to mark on a line how much knowledge they felt they had on 24 items before the workshop and after the workshop.

Changes in perceived knowledge

Overall there was dramatic change between perceived knowledge prior to the workshop to perceived knowledge after the workshop, as measured by 24 items on question 19 of the post-survey.

33% total perceived knowledge gained averaged across all 24 items.

Aggregate changes in perceived knowledge



The amount of perceived knowledge gained varied by each topic

Percentage perceived knowledge gained was calculated by averaging amount of knowledge change reported (post (minus) pre) and dividing by 15 (Maximum possible change).

Topic	Average change	Average/15 = percentage change
Hunter motivations	5.5	36.7%
Hunter demographics	4.3	28.7%
Relationship hunting and conservation	4.1	27.3%
Safe use firearms	6.3	42%
Firearms use	6.4	42.7%
Hunting skills and techniques	7.1	47.3%
Biological basis for hunting	4.1	27.3%
Cultural values of hunting	4.9	32.7%
Ecological values of hunting	4	26.7%
Hunter respect to quarry	5.4	36%
Fair chase	6.2	41.3%
Potential ethical dilemmas faced by hunters	6.4	42.7%
Hunter respect to others	5.6	37.3%
Historic impact of hunting on conservation	5.2	34.7%
Hunter respect to the land	4.8	32%
Potential for hunters to be conservation advocates	4.4	29.3%
Trapper motivations	7.4	49.3%
Trapper demographics	6.9	46%
Trapping and conservation	6.8	45.3%
Trapping skills and techniques	7.6	50.7%
Angler motivations	3	20%
Angler demographics	3.2	21.3%
Relationship fishing and conservation	3	20%
Fishing skills and techniques	2.5	16.7%



“Over the past decade, we have sent many employees to CLFT. These were employees in key positions who had little to no experience with hunting. Our employees returned with a better understanding and appreciation of hunting, even though not all have become hunters. Their CLFT training definitely helped them become more effective in their jobs.”

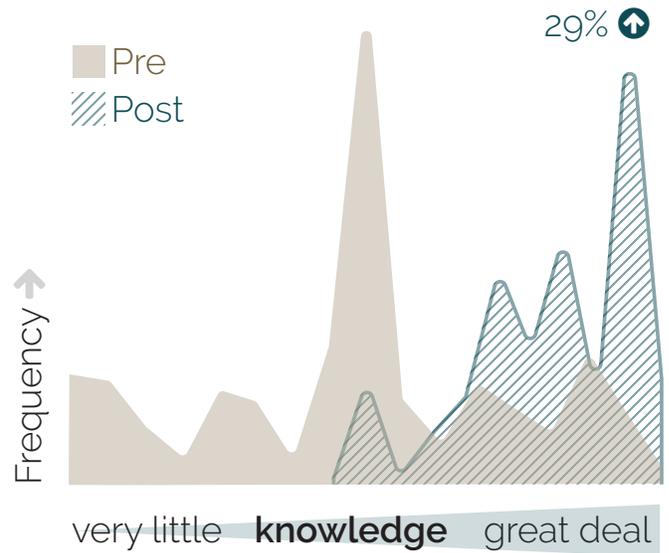
- Greg Sheehan, Director, Utah Division of Wildlife Resources

The following charts for each item under question 19 represent the movement in perception of level of content knowledge from before the workshop to after.

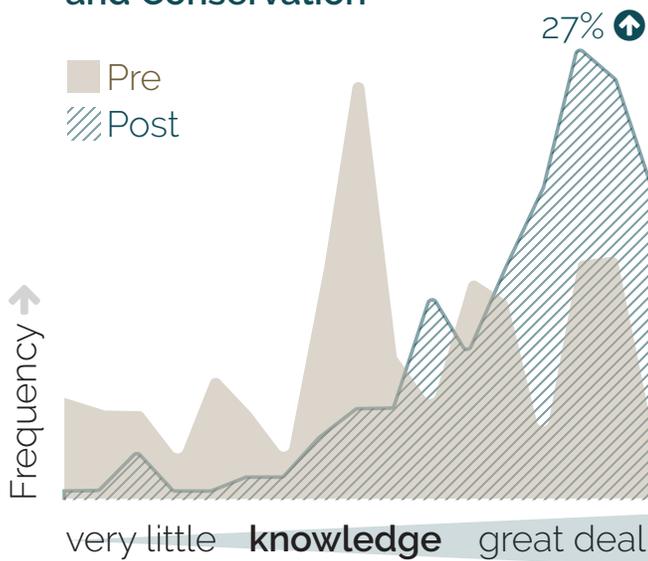
Hunter motivations



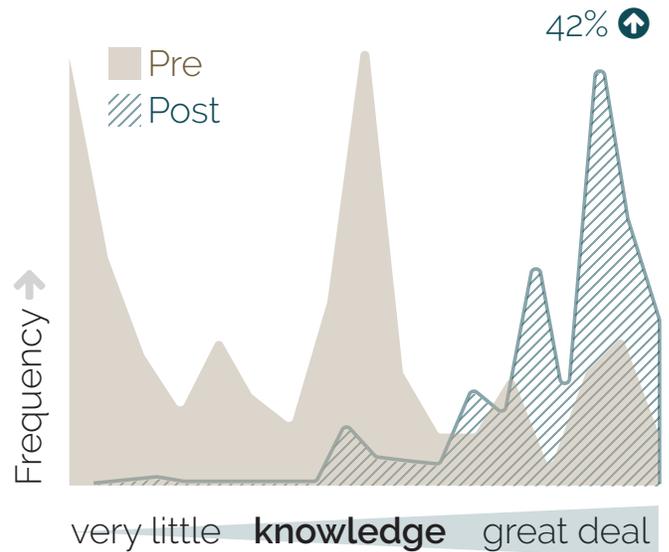
Hunter demographics



Relationship Between Hunting and Conservation



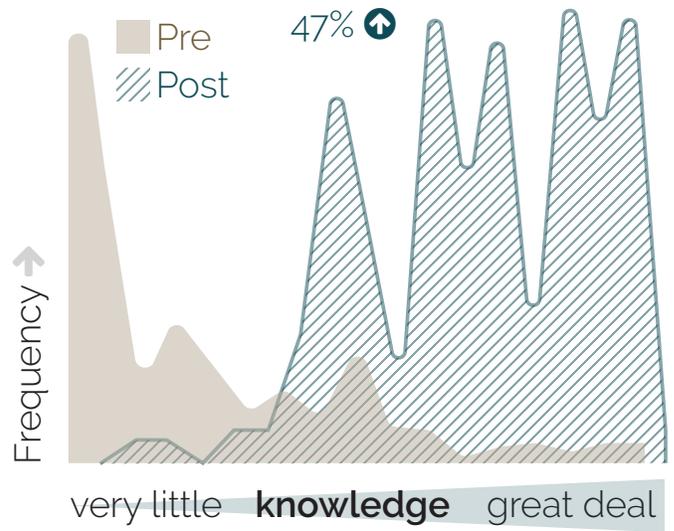
Safe Handling of Firearms



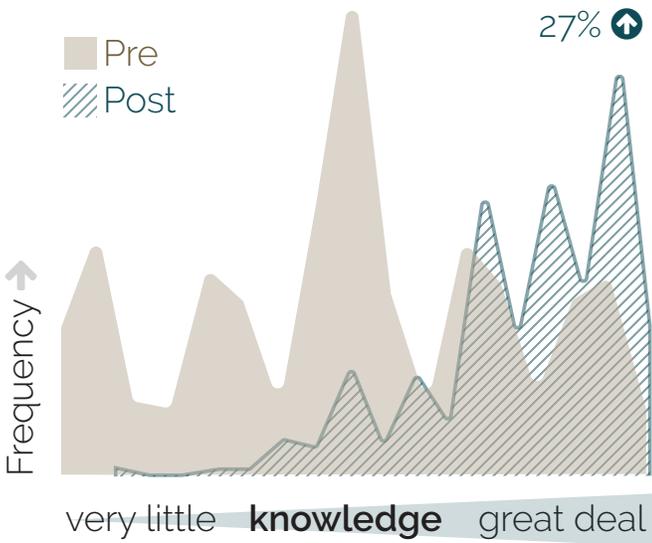
Firearms use



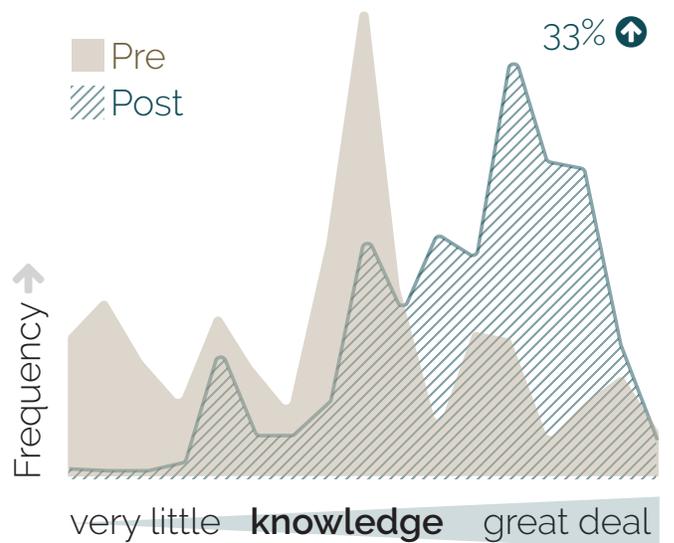
Hunting Skills and Techniques



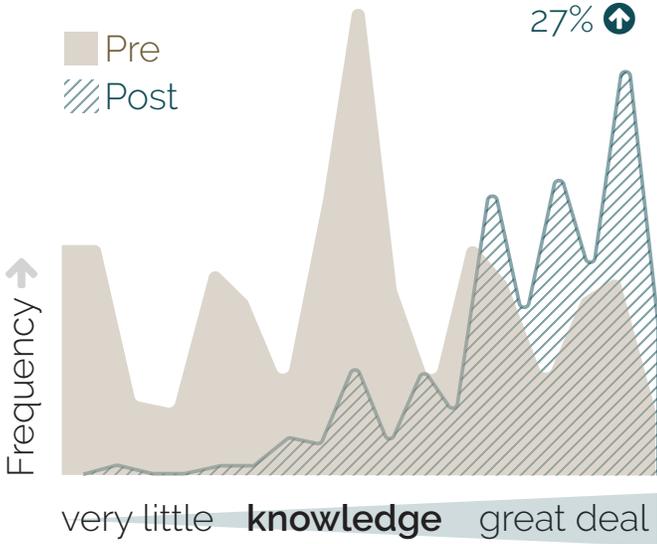
Biological Basis for Hunting



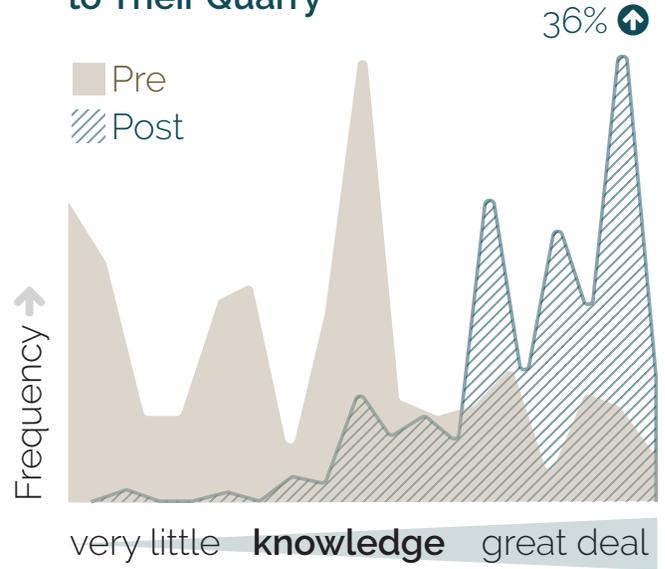
Cultural Values of Hunting



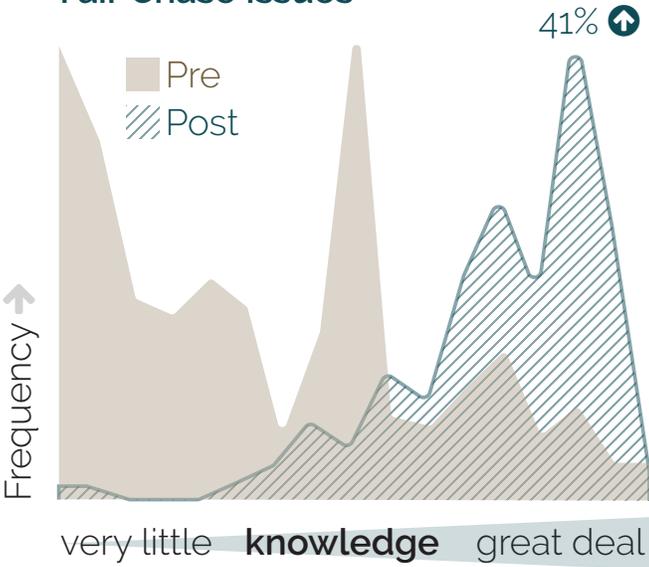
Ecological Values of Hunting



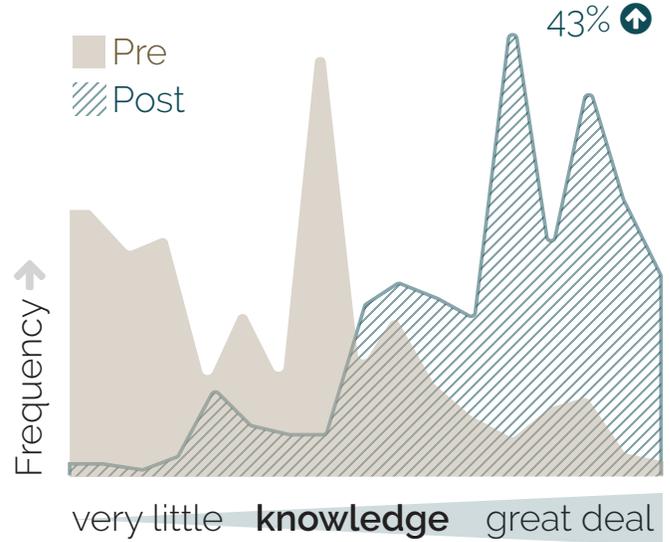
Hunter Responsibilities to Their Quarry



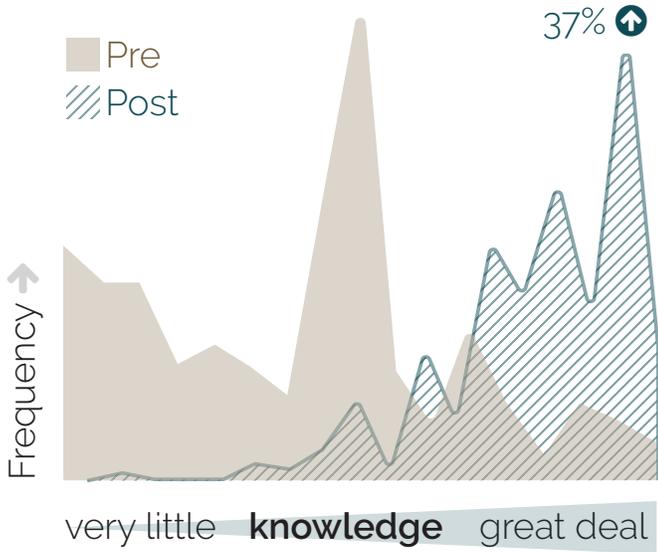
Fair Chase Issues



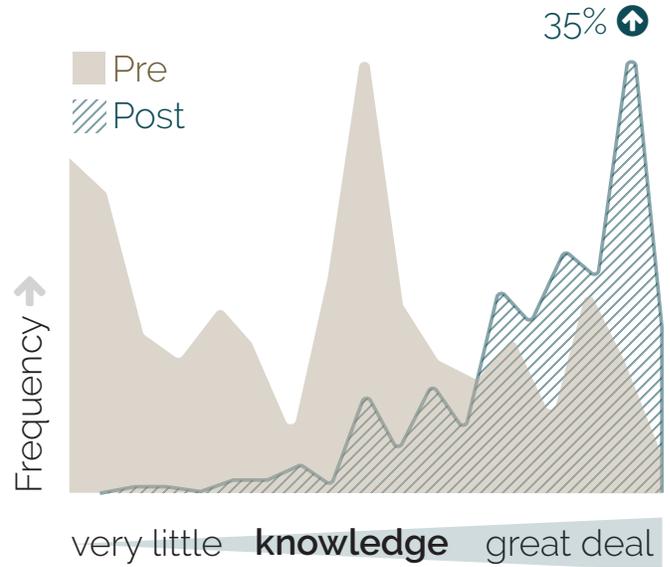
Potential Ethical Dilemmas Faced by Hunters



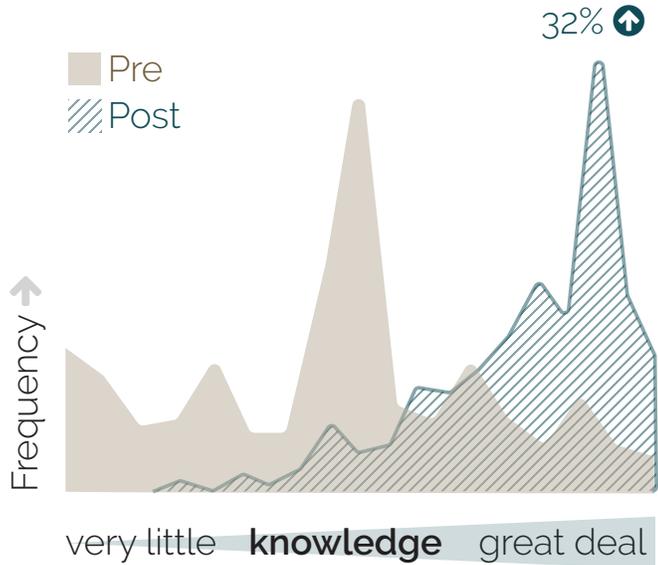
Hunter Responsibilities to Others



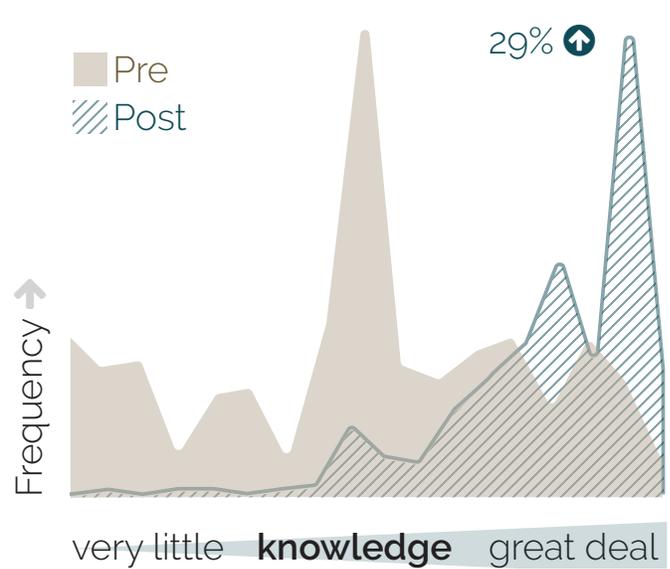
Historic Impact of Hunters as Conservationists



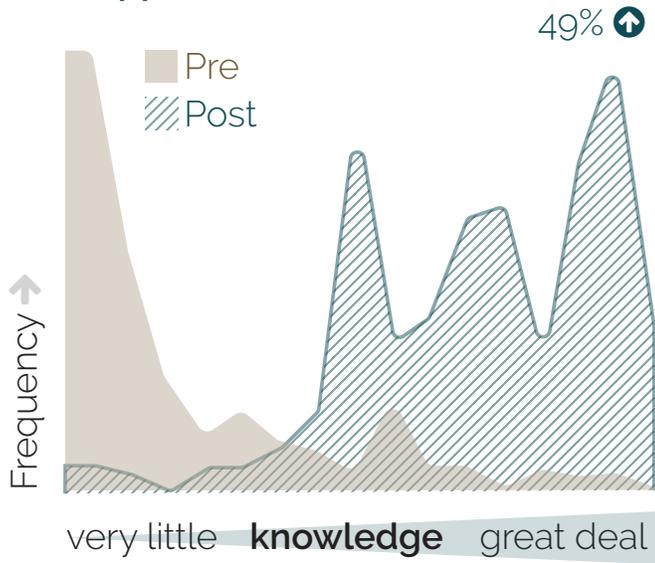
Hunter Responsibilities to the Land



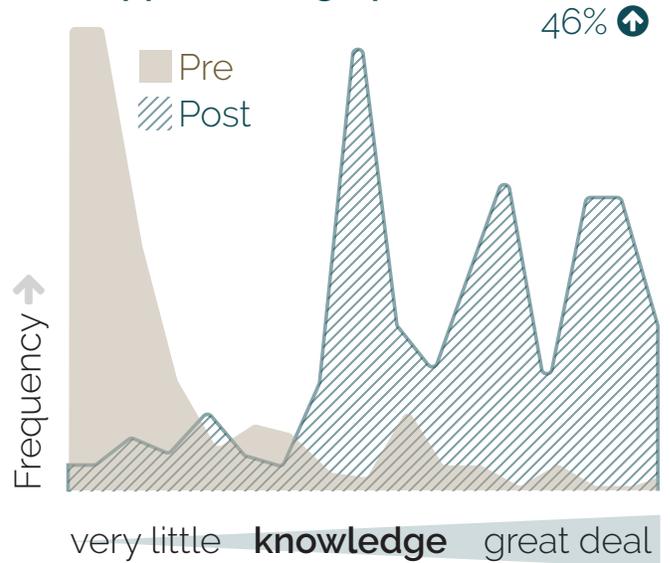
Potential for Hunters to be Conservation Advocates



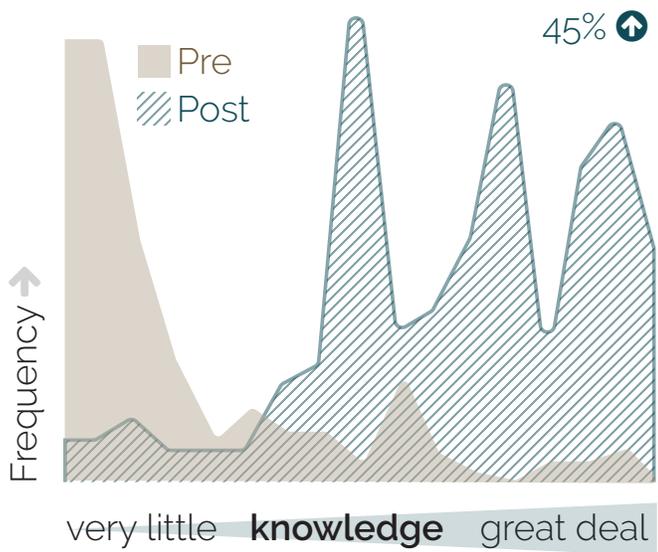
Trapper Motivations



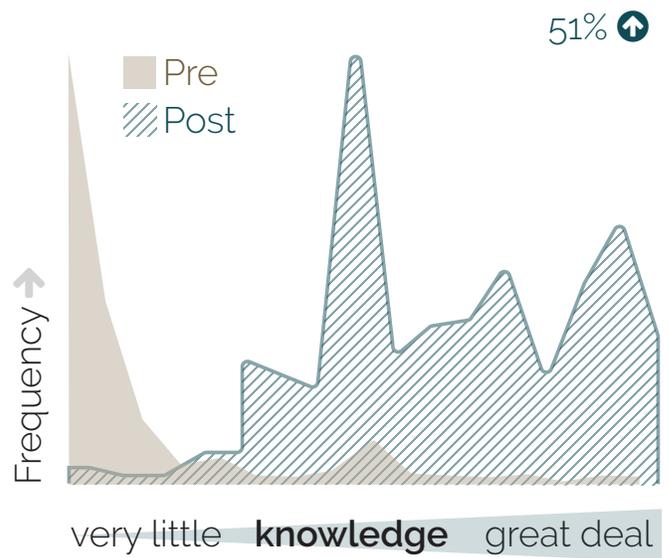
Trapper Demographics



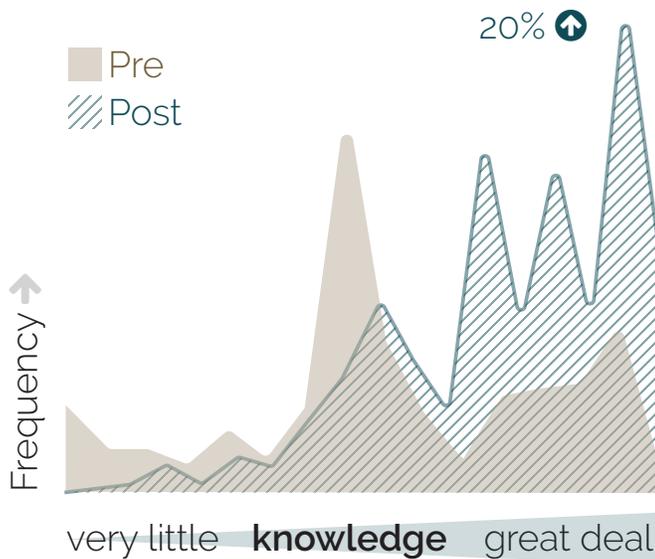
Relationship Between Trapping and Conservation



Trapping Skills and Techniques



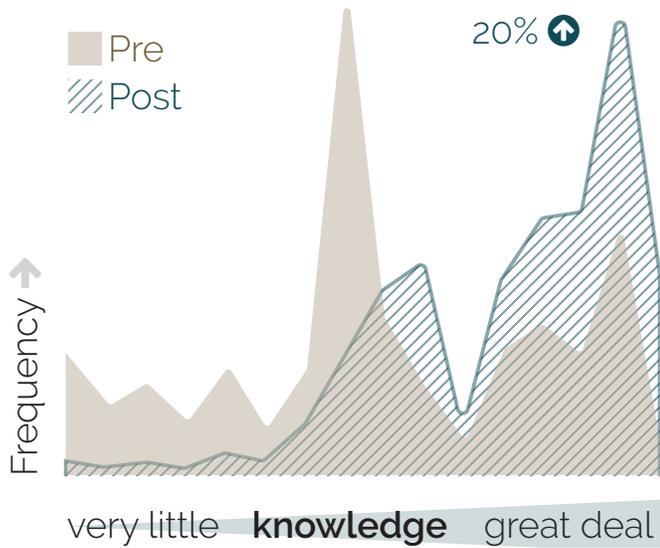
Angler Motivations



Angler Demographics



Relationship Between Fishing and Conservation



Fishing Skills and Techniques



Survey response excerpts for objective 4

“Thank you for the trapping information. It was intimidating before, and I had a very negative opinion about it. I’m glad the trappers did the research and modifications to make these traps restraints and snares more safe and species specific. Disney movies and FernGully put a lot of false information in kid’s heads.”

Property Manager, Midwest US

“I am very grateful for this experience. I believe it has helped me personally and professionally. I have a much better understanding of hunting and am actually more open and interested in participating in hunting more because of the safety, ethics, biological and social motivations that I’ve learned and gained.”

Species Management Biologist, Western US

Objective 4.2: Participants are familiar with hunting skills, knowledge, and techniques

Analysis: Looking more closely at this objective, we analyzed the 27 individuals who in their pre-workshop survey said they were uncomfortable with firearms and the 15 who felt hunting was unsafe prior to the workshop.

Results:

Participants that came to the workshop skeptical or uncomfortable with firearms and hunting (a small minority of participants) demonstrate greater comfort with firearms and greater understanding of hunting and safety.

Of the 25 participants who came to the workshop uncomfortable with firearms, after the workshop:

- One still felt the same
- Eight said they were a bit more comfortable
- 15 said they were a great deal more comfortable

Of the 15 who felt hunting was unsafe before the workshop, after the workshop:

- Seven said hunting was very safe after the workshop
- Two said it was safe
- Five still felt it was unsafe
- One still felt it was very unsafe

Survey response excerpts for objective 4.2

“Very well done! The flow is good; the learning curve in preparation for the hunt was good. I appreciate all the repetition with handling the shotguns, so on hunt day I felt ready.”

Wildlife Education Director, Eastern US

“It was an excellent workshop. The hands on firearm and hunting experience were crucial to helping me understand the hunting world. It was very well run and the schedule was just right. I will highly recommend this workshop to others. It was nice having a female instructor.”

Social Media and Video Producer, Southern US

Objective 4.3: Participants are familiar with historic role of hunters and conservation

Analysis: Comparison of the responses on Pre-workshop survey question 11 and Post-workshop survey question 24: "Do you think hunting will be a viable conservation tool in 25 years?"

Results:

Participants show an enormous increase in their understanding of the role of hunting in conservation.

- **70% of those who, before the workshop, said they didn't know if hunting would be a viable conservation tool in 25 years, said after the workshop they thought hunting was very likely or likely to be important for conservation** ($p < 0.0001$).

Survey response excerpts for objective 4.3

"Understanding the History of Hunting really outlined the conservation intent and contributions hunting makes to the landscape in which we live."

Fisheries Biologist, Northeast US

"The History of Hunting and Conservation and the North American Model, most directly inform my position working with hunters to continue and advance conservation of wildlife through involvement and policy."

Public Involvement Specialist, Western US

Final Objective 4: Participants are familiar with ethical dilemmas that hunters grapple with

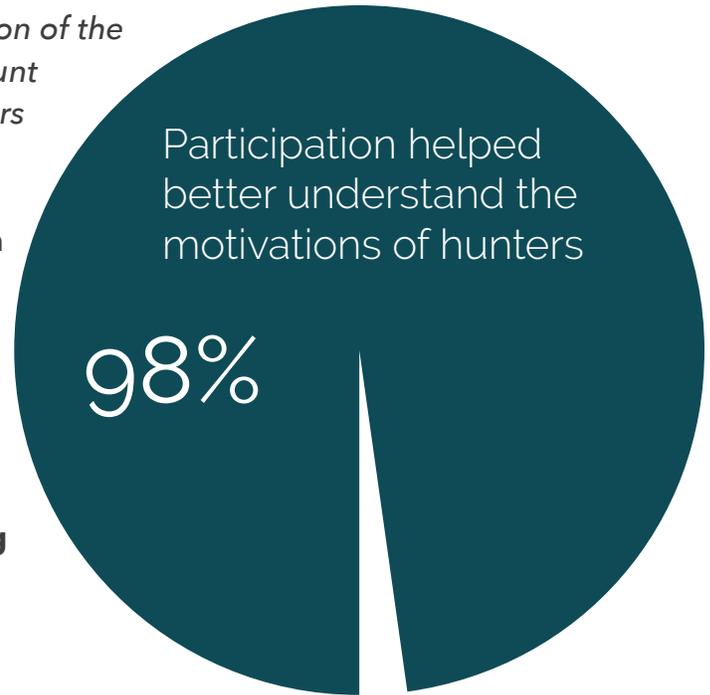
Analysis: For these analyses, we used questions 22 and 23 on the post-workshop survey, which asked participants if they thought hunters were concerned with ethical conduct and if the range of ethical dilemmas faced by hunters is broad or narrow. We also looked at if participating in a hunt influenced participants' understanding of hunters and their motivations.

Results:

Participants leave the workshop with an appreciation of the ethical issues hunters face and participating in a hunt does increase their overall understanding of hunters and their motivations.

- 97% (329/338) said that hunters are very much or somewhat concerned with their ethical conduct
- 94% (315/336) said that the spectrum of ethical dilemmas faced by hunters were broad to complex

320 workshop attendees reported participating in the hunt. Of those, 98% (n=312) said that doing so helped them to better understand the motivations of hunters.³



Survey response excerpts for final objective 4

"I deal with the public frequently and I never fully considered the scope of ethical decisions hunters are constantly confronted with."

Regional Coordinator, Western US

"The discussion on ethics provided the best opportunity to discuss and explore a wide range of opinions and outlooks; as a public servant accounting for the most possible input is paramount to success."

Economist, Eastern US

³ Of the 17 who said they did not hunt but still went along for the hunt - 15 said doing so helped them to better understand the motivations of hunters, one said it did not and one did not answer the question.

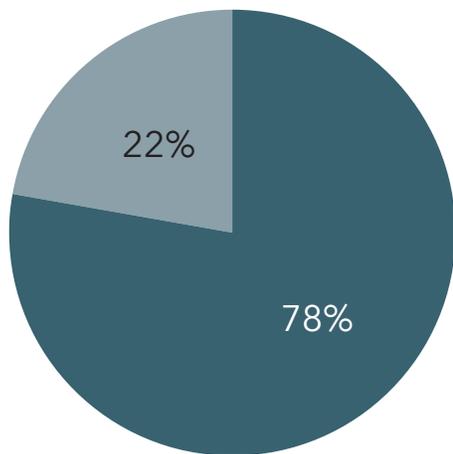
Objective 5: Participants are better prepared to be agency employees

Analysis: Analyses looked at question 20 and 21 on the post-workshop survey.

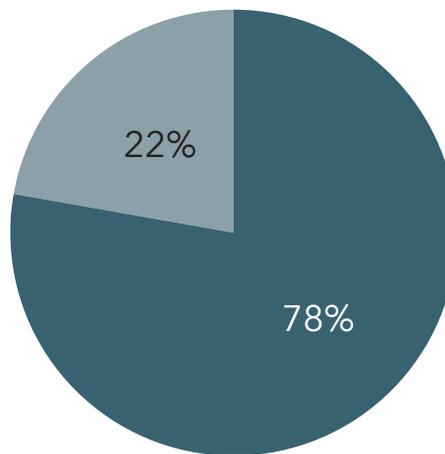
Results:

After the workshop participants have a clear appreciation of the importance of understanding hunting to better perform in their jobs.

Importance of Working Knowledge of Hunting to Natural Resource Professionals



Impact of Hunting on Conservation



Survey response excerpts for objective 5

"This experience was very beneficial for me; the instructors' passion had a significant impact on me. I feel like I have more of an appreciation for my agencies mission and can now relate to it more."

Human Resources Administrator, Northwest US

"One more way this training can really help me professionally and that is with my frequent interactions with NGOs and people that typically do not support hunting/trapping. I can now have much more informed conversations with them about these issues."

Project Manager, Eastern US

Objective 6: Participants apply knowledge about hunting and conservation in their professional and personal life

Follow-up, post-workshop surveys were conducted in the Spring of 2017 and provide a detailed assessment of how the CLfT program is achieving objective 6.

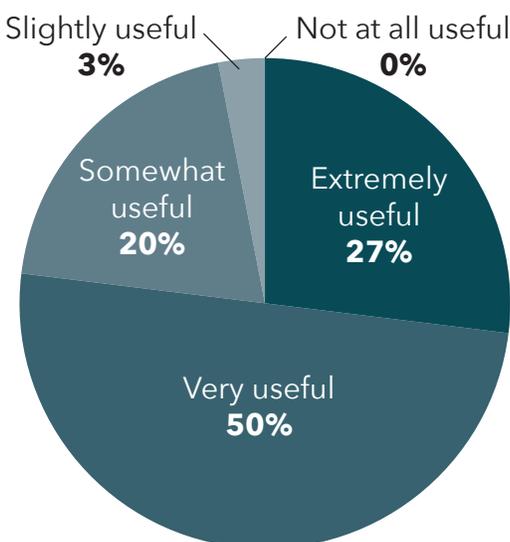
Brief online surveys, were used to assess the long term impacts of workshops on participants. In particular, CLfT is able to track, over time, impacts of the workshop on views of hunting and conservation and how the workshop itself may impact conservation professionals interactions in the field. While the data presented thus far in this report demonstrate overwhelmingly positive impacts of the CLfT workshops, follow up surveys allow us to understand longer lasting impacts. Results below demonstrate the staying power and lasting impact of attending a CLfT workshop (the follow-up survey can be found in Appendix E).

A short, web-based survey was used to determine if participants take the knowledge and attitudes gained during CLfT workshop and apply those in their personal and professional lives. The survey was designed to take no more than twenty minutes and to provide both quantitative and qualitative responses to assess when and how the workshop has impacted past participants. In particular, several of the questions were also used on the long-term survey to assess if the positive response to the workshops were maintained over time.

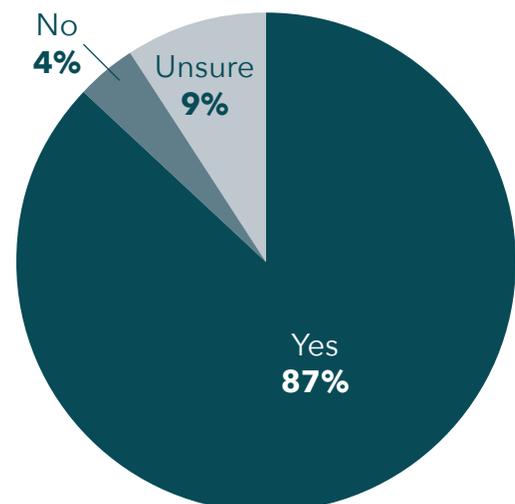
A total of 179 previous workshop attendees responded to the long term follow up survey, representing a response rate of 61%. All of them had participated in the CLfT workshop between 2 - 5 years prior to receiving the web-based survey. We found no meaningful differences between the 179 respondents to the long-term survey and those that did not respond, allowing us to assert that this sample is representative of CLfT workshop attendees.

Overwhelmingly, the long term results demonstrate the positive impact of the CLfT workshop and the staying power that the workshops have for natural resource professionals. Here we highlight a few of the most compelling results, demonstrating that Objective 6 of the results chain model is being achieved through the CLfT workshops.

In your professional responsibilities, have you found what you learned at CLfT to be ...



Has CLfT training been important to your individual professional development?



Participants find the CLfT workshops useful in their work and have directly apply what they learned to their work as Natural Resource Professionals. In particular in follow up responses, individuals cited examples of improved ability to communicate with hunters, landowners, and the general public.

Furthermore, the majority of respondents felt that their interactions with hunters, anglers, and trappers changed due to the workshop. With most of them saying after the workshop they felt they could better understand this important conservation constituency. 77% of survey respondents stated that they found what they learned in the workshop to be extremely or very useful in their professional responsibilities. As just one example, a respondent conveyed this story:

"A member of the public called recently and asked, 'if all the wildlife belongs to the State, why doesn't the State pay for damages to my car when I hit one?' I explained that the Public Trust Doctrine was not as she stated but rather that the wildlife belongs to the people, held in trust for them by the State. She still wasn't happy but she didn't sound as angry when she hung up!"

The results of the long-term survey demonstrate that the impacts of the workshops on individual participants have staying power. In particular for the question "Do you think hunting will be a viable conservation tool in 25 years?" as demonstrated in Objective 4.3, 70% of those who, before the workshop, said they didn't know if hunting would be a viable conservation tool in 25 years after the workshop said it was likely that it would be. There was no significant difference between the post workshop survey and the long term survey for this question. This view of the importance of hunting for conservation was learned by many at the workshop and they maintained that view over time.

Furthermore, close to 40% of the long term survey respondents found that the workshops impacted them outside of their professional lives, in particular after the workshops they told stories about being better able to relate to family members who hunt or to taking their own children hunting.

Overwhelmingly, the long term survey results demonstrate the staying power of the CLfT workshops in promoting more informed and more empathetic natural resource professionals.

"I think I am more informed and more compassionate when speaking with hunters. I can relate, which provides credibility to me as a young woman in natural resources. I'm able to have informed debates. I'm able to truly listen to different opinions with an open mind."

"I have a greater understanding for why people hunt/fish, and how they have been instrumental in conservation efforts and generating revenue that enhance outdoor recreational opportunities. I went from being indifferent or even condescending, to being a supporter and promoter."

Looking ahead

Afterword by Zach Lowe

CLfT is focused on a future plan that will allow us to grow strategically by targeting agencies, universities, and entities that we have yet to reach but potentially have the greatest impact on our wildlife resources. To better inform that process, we are beginning an exciting project to track CLfT participants as they advance in their careers, and to see how the program has helped their advancement and to better serve wildlife conservation.

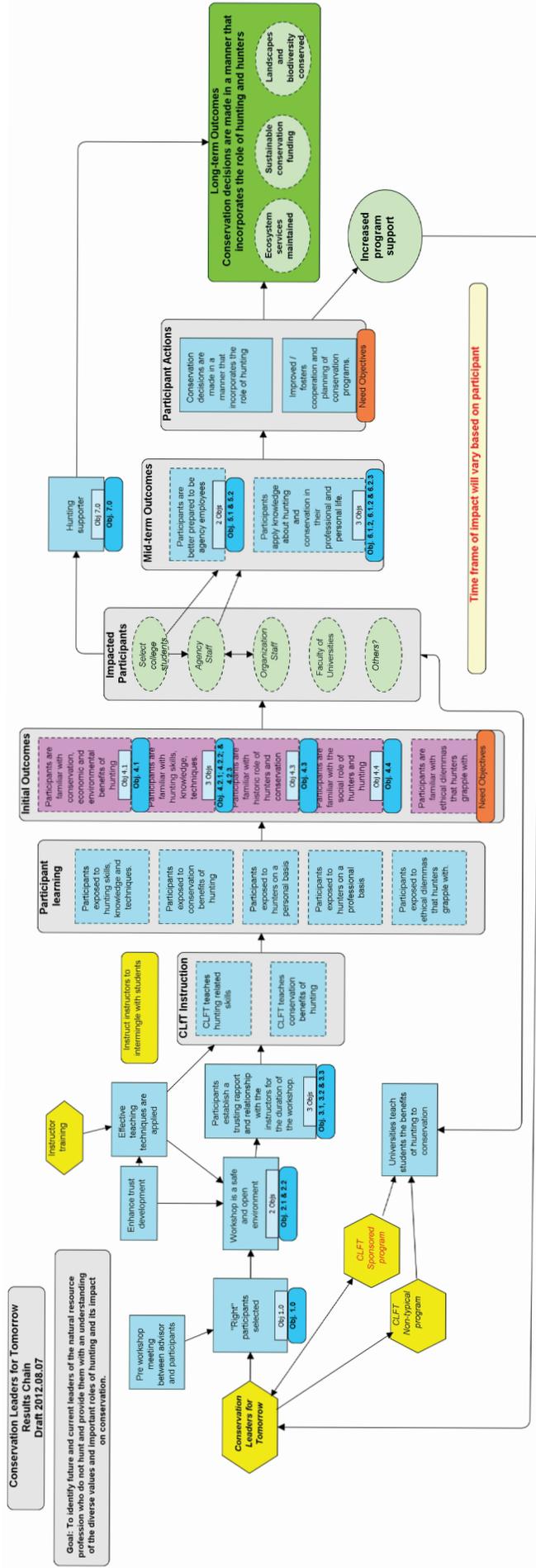


"I took the course last year in West Virginia, and found it to be one of the best I have ever taken. Not only do they fully explain the North American model for Wildlife management, and the social and cultural histories involved, they do it in a way that allows the class member to experience it without feeling like they need to buy in to a personal lifestyle change. It is a great class for those who regularly work with hunting and recreational interests as well as state and federal wildlife managers. I highly recommend it for wildlife biologists and recreation planners in the BLM."

- David Howell, Associate Regional Director, BLM

Appendix A: Results Chain Model

The CLFT Results Chain demonstrates the expected pathways participants take as they experience the CLFT workshop.



Appendix B: Obj. 4 T-Statistics

Table of t-statistics for objective 4 using paired t-tests for perceptions of pre to post workshop knowledge (p values represent two-tailed tests)

Topic	t=	df	p <
Hunter Motivations	-32.05	314	0.0000
Hunter Demographics	-23.25	317	0.0000
Relationship between hunting and conservation	-22.07	318	0.0000
Safe Handling of Firearms	-29.54	318	0.0000
Hunting Skills and Techniques	-39.66	318	0.0000
Biological Basis for hunting	-23.15	318	0.0000
Cultural Values of Hunting	-26.42	317	0.0000
Ecological Values of Hunting	-21.67	318	0.0000
Hunter Responsibility to Quarry	-25.93	317	0.0000
Fair Chase	-29.15	318	0.0000
Ethical Dilemmas faced by hunters	-31.33	318	0.0000
Hunter Responsibility to others	-28.63	317	0.0000
Historic impact of Hunters on Conservation	-24.91	318	0.0000
Hunter Responsibility to the Land	-25.55	318	0.0000
Potential for Hunters to be Conservation Advocates	-23.06	317	0.0000
Trapper Motivations	-37.03	270	0.0000
Trapper Demographics	-31.89	268	0.0000
Relationship between trapping and conservation	-31.07	269	0.0000
Trapping Skills and Techniques	-37.95	269	0.0000
Angler Motivations	-18.63	268	0.0000
Angler Demographics	-19.66	267	0.0000
Relationship between fishing and conservation	-18.27	267	0.0000
Fishing Skills and Techniques	-16.36	268	0.0000

Pre/post comparison of the role of hunting in conservation in 25 years used a Wilcoxon Sign Rank test for non-parametric data: $z = -13.54$, $p < 0.0000$

Appendix C - Obj. 3 - Curriculum Assessment

Objective 3 - Total number of rankings of “not at all” to “slightly informative” for curriculum components including roundtables, technical presentations and field exercises.			
Workshop	Roundtables (n<=11) ¹	Technical Presentations (n<=9) ²	Field Exercises (n<=18) ³
December 2012 Max McGraw (16)	3	6	15 ⁴
December 2012 NCTC (14)	2	0	5
February 2013 MMWF (14)	0	1	2
March 2013 Charlie Elliot (15)	7	3	4
October 2013 Charlie Elliot (16)	0	6	8
November 2013 MMWF (16)	3	0	2
December 2013 MMWF (16)	4	3	20 ⁵
February 2014 HLR (18)	0	6	13
October 2014 Charlie Elliot (17)	0	5	5
November 2014 Charlie Elliot (11)	5	1	8
December 2014 NCTC (14)	1	2	4
January 2015 MMWF (13)	1	1	1
February 2015 Flying-B Ranch (11)	1	2	5
February 2015 MMWF (11)	1	2	2
February 2015 Highlonesome (11)	1	1	6
October 2015 CEWC (15)	0	3	6
November 2015 CEWC (15)	0	0	8
December 2015 NCTC (15)	4	1	9
January 2016 Flying B Ranch (14)	1	1	8
February 2016 HLR-CO (17)	3	1	15 ⁶
February 2016 MMWF (15)	9	7	11
February 2016 HLR-CO (13)	8	4	4
February 2016 MMWF (15)	3	1	3

¹There were up to 11 roundtables, including: Demographics and Motivations of Hunters, Trappers and Anglers; Hunting Laws and Regulations; The role of Hunting in Society; Hunter Responsibility and Ethics; North American Model; Pre and Post Hunt Cares; Reflections on the Hunt: Contemporary Management Issues; Targeted Discussions; Lingering Issues; Lasting Impressions.

²There were up to 9 technical presentations, including: Hunter Safety and Education; History of Hunting in Wildlife Management and Conservation; The Biological Basis for Hunting; Preparation of Game for the Table; Dog Handling (Hunting with Dogs); Firearms and Ammo Demo/HE Tools; Archery Hunting; Methods of Take; Rifle Hunting.

³There were up to 18 field exercises, including: Shotgun Fitting and Eye Dominance; Firearms Handling; Basic Fishing Gear and Methods; Casting; Trap Types, Parts and Gear; Setting Traps; Processing Harvested Furbearers; Stalking; Clay Target Shooting; BB Gun Target Acquisition; Zones of Fire, Carries and Safety Walk; Pellet Gun/Rifle Gun Exercise; Game Recovery; Shot Gun Mounting (Lasers); Hunting; Dressing and Packaging Game; Pre and Post Hunt Cares; Firearms Cleaning.

⁴Of the 15 “slightly” or “not at all” informative rankings for this workshop’s field exercises, six came from one person.

⁵Of the 20 “slightly” or “not at all” informative rankings for this workshop’s field exercises, six were for the Basic Fishing Gear and Methods exercise and five were for the Casting exercise.

⁶Of the 15 “slightly” or “not at all” informative rankings for this workshop’s field exercises, ten were for the Basic Fishing Gear and Methods exercise.

Interpretation of these data requires some knowledge of the individual workshops in that everything from the weather to illness, to group dynamics can vary. These sorts of “on-the-ground” factors are needed to make sense of those workshops where the field exercises were slightly less well received than the others.

Overwhelmingly, there was very little dissatisfaction with the roundtables, technical presentations or field exercises in general or workshops overall. This is certainly a testament to the quality of instructors.

Appendix D: Perceived Knowledge Movement

The CLfT curriculum has the capacity to educate individuals from all levels of experience and background. Each participant’s perceived pre and post measurement was categorized into a corresponding percentage of the average knowledge gains for any given topic. This range of knowledge (scaled 0-100%) for both pre and post measures were divided into 20% increments that are fitted into an associated scaled table. Each table indicates where on the spectrum learning began and ended, with an average measure of knowledge gained. Knowledge gains were categorized with the following scale:

- “know very little” = 0-20%
- “know little” = 21-40%
- “know some” = 41-60%
- “know a lot” = 61-80%
- “know a great deal” = 81-100%

Of particular interest are those individuals who self-identified as already having a moderate to high degree of knowledge or experience in specific subject areas. We wanted to understand where learning occurred and ensure that the depth of knowledge and learning was present for those who had a high degree of understanding of a specific subject. Evaluating the results by each topic supports the idea that the curriculum is very robust and serves to educate individuals at all levels of reported “pre” knowledge.

Hunter Motivations

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little			1 (2.5)	17	10 (6.8)	45	35 (9.5)	63.2	16 (12.3)	82.2
Pre - little					11 (3.5)	23.6	40 (6.0)	40.1	20 (7.5)	50.2
Pre - some					8 (1.8)	11.7	62 (4.1)	27.2	63 (6.0)	40.1
Pre - a lot							16 (1.1)	7.1	19 (2.0)	13.5
Pre - a great deal									14 (.55)	3.6

Hunter Demographics

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	3 (0.2)	1.1	5 (4.1)	27.3	18 (6.9)	46.2	22 (8.8)	58.5	20 (12.1)	80.4
Pre - little					13 (3.4)	22.9	29 (5.8)	38.4	12 (7.3)	48.6
Pre - some					21 (1.1)	7.4	65 (3.5)	23.4	34 (5.9)	39.1
Pre - a lot							29 (0.7)	4.8	29 (1.3)	9.0
Pre - a great deal									18 (0.4)	2.6

Relationship Between Hunting and Conservation

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little			2 (5.3)	35.0	7 (6.3)	42.2	19 (9.7)	64.6	16 (11.9)	79.6
Pre - little					8 (3.3)	22.1	32 (6.1)	40.5	18 (7.5)	50.2
Pre - some					7 (1.2)	7.9	56 (3.3)	22.0	36 (5.7)	37.9
Pre - a lot							33 (0.8)	5.6	47 (1.9)	12.8
Pre - a great deal									38 (0.5)	3.2

Safe Handling of Firearms

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	1 (0)	0	6 (5.2)	35.7	25 (7.0)	46.7	50 (9.9)	66.2	42 (12.1)	80.6
Pre - little					2 (2.6)	17.3	28 (6.2)	41.1	23 (7.8)	51.7
Pre - some					3 (1.7)	11.1	35 (3.7)	24.8	44 (5.9)	39.5
Pre - a lot							13 (0.8)	5.1	21 (1.7)	11.4
Pre - a great deal									26 (0.4)	2.5

Firearms Use

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	1 (0)	0	7 (5.6)	37.1	44 (7.1)	47.1	55 (9.4)	66.3	34 (12.2)	81.4
Pre - little					6 (3.7)	24.4	30 (5.8)	38.9	15 (8.1)	54.3
Pre - some					4 (2.1)	14.2	37 (3.8)	25.4	35 (5.5)	36.9
Pre - a lot							12 (0.9)	5.8	20 (2.1)	13.7
Pre - a great deal									18 (0.5)	3.5

Hunting Skills and Techniques

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	4 (1.6)	10.8	17 (5)	33.3	93 (7.0)	46.4	61 (10)	65.3	40 (12.2)	81.2
Pre - little			1 (1.0)	6.7	14 (3.9)	26.2	25 (6.2)	41.8	8 (8.3)	55
Pre - some					3 (0.8)	5.6	23 (3.7)	24.7	13 (6.0)	39.7
Pre - a lot							4 (1.1)	7.5	6 (2.0)	13.3
Pre - a great deal									7 (0.1)	0.6

Biological Basis for Hunting

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	1 (0.5)	3.3	8 (4.8)	31.8	25 (6.6)	44.1	25 (9.1)	60.7	11 (11.3)	75.2
Pre - little			5 (1.2)	8.0	16 (2.5)	16.9	36 (5.7)	37.8	9 (7.1)	47.4
Pre - some					9 (1.3)	8.4	57 (3.1)	20.9	24 (6.0)	40.0
Pre - a lot							41 (1.2)	7.1	24 (1.6)	10.7
Pre - a great deal									28 (0.4)	2.7

Cultural Values of Hunting

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little			4 (4.6)	30.8	20 (6.5)	43.3	29 (9.5)	63.5	23 (11.7)	77.8
Pre - little			1 (1.5)	10	16 (3.3)	21.9	44 (5.7)	38.3	11 (7.3)	48.9
Pre - some					11 (0.8)	5.5	66 (3.5)	23.1	31 (5.9)	39.3
Pre - a lot							21 (0.9)	6.1	21 (2.2)	14.3
Pre - a great deal									20 (0.4)	2.5

Ecological Values of Hunting

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little			5 (4.2)	28.0	23 (6.6)	43.8	23 (9.1)	60.7	11 (11)	73.6
Pre - little			1 (0.5)	3.3	12 (2.9)	19.2	33 (6.1)	40.6	11 (8.1)	53.9
Pre - some	1 (-7.5)	-50			19 (1.3)	8.9	54 (3)	19.9	30 (5.6)	37.5
Pre - a lot							32 (0.7)	4.8	37 (1.5)	9.7
Pre - a great deal									27 (0.4)	2.6

Hunter Responsibilities to Their Quarry

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	1 (2)	13.3	7 (4.8)	31.9	31 (6.4)	43.2	35 (9.4)	62.8	32 (12)	80.3
Pre - little			1 (1.5)	10	13 (3.5)	23.1	41 (6.1)	40.7	13 (7.9)	52.8
Pre - some					10 (1.0)	6.3	54 (3.5)	23.2	23 (5.3)	35.7
Pre - a lot	1 (-9.5)	-63.3					23 (0.8)	5.4	16 (1.8)	11.8
Pre - a great deal									17 (0.4)	2.4

Fair Chase Issues

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	3 (1.2)	7.8	8 (4.9)	32.9	32 (6.7)	44.4	48 (9.7)	65	45 (12)	79.8
Pre - little			1 (1.0)	6.7	14 (3.3)	22	38 (6.1)	40.8	11 (8.9)	59.4
Pre - some					10 (1.2)	7.5	38 (3.6)	23.9	22 (5.9)	39.4
Pre - a lot							38 (3.6)	23.9	22 (5.9)	39.4
Pre - a great deal									8 (0.2)	1.3

Potential Ethical Dilemmas Faced by Hunters

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little			5 (4.3)	28.7	29 (6.8)	45.6	62 (9.4)	62.4	41 (12.1)	81
Pre - little			1(0)	0	12 (3.3)	21.8	33 (6.0)	40.1	17 (8.6)	57.1
Pre - some					7 (1.1)	7.1	51 (3.6)	23.9	24 (5.6)	37.6
Pre - a lot							8 (0.8)	5.4	20 (1.8)	12
Pre - a great deal									5 (0.3)	1.5

Hunter Responsibilities to Others

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	1 (0)	0	8 (4.4)	29.6	20 (6.9)	46.1	52 (9.4)	62.4	24 (12.2)	81.5
Pre - little			2 (0.6)	4	22 (2.7)	17.7	31 (5.7)	38.3	21 (8.0)	53.1
Pre - some					6 (1.3)	8.5	48 (3.7)	24.7	33 (5.8)	38.6
Pre - a lot							23 (1.0)	7	14 (2.1)	14
Pre - a great deal							1 (-0.5)	-3.3	12 (0.3)	1.9

Historic Impact of Hunters as Conservationists

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	1 (0)	0	8 (4.3)	28.3	31 (6.7)	44.8	41 (9.6)	64.3	25 (12.3)	82
Pre - little			2 (1.8)	11.7	14 (2.9)	19.3	35 (5.8)	38.6	8 (8.3)	55
Pre - some					10 (1.4)	5.3	46 (3.5)	23.6	26 (5.5)	36.8
Pre - a lot	1 (-7)	-46.7					25 (0.8)	5.5	28 (1.9)	12.4
Pre - a great deal									18 (0.4)	2.8

Hunter Responsibilities to the Land

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	2 (2.5)	16.7	6 (4.4)	29.4	21 (6.1)	40.8	32 (9.3)	62	18 (12.1)	80.7
Pre - little			3 (1.2)	7.8	17 (3.1)	20.8	32 (5.9)	39.3	20 (7.5)	50
Pre - some					22 (1.3)	8.8	57 (3.6)	23.7	28 (5.5)	36.4
Pre - a lot							26 (0.9)	6	21 (1.8)	12.1
Pre - a great deal									14 (0.4)	2.6

Potential for Hunters to be Conservation Advocates

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	2 (1.5)	10	5 (4.4)	29.6	18 (6.4)	42.8	28 (9.9)	66.2	18 (11.8)	78.7
Pre - little					14 (2.6)	14.1	26 (5.8)	38.5	12 (8.0)	53.6
Pre - some					15 (1.5)	10.2	55 (3.1)	20.8	38 (5.6)	37.2
Pre - a lot							27 (0.8)	5.6	38 (1.7)	11.6
Pre - a great deal									21 (0.4)	2.5

Trapper Motivations

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	5 (1.2)	8	20 (4.8)	31.7	75 (7.0)	46.7	65 (9.9)	66.3	29 (12.8)	85.1
Pre - little					6 (4.0)	26.7	18 (5.9)	39.3	5 (7.9)	52.7
Pre - some					3 (1.8)	12.2	8 (3.3)	21.7	19 (5.7)	38.1
Pre - a lot							4 (1.0)	6.7	6 (2.0)	13.2
Pre - a great deal									4 (0.6)	4.2

Trapper Demographics

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	13 (1.5)	10.3	26 (4.6)	30.8	76 (6.7)	44.8	58 (10)	66.6	30 (12.8)	85.1
Pre - little			2 (2.0)	13.3	6 (3.8)	25	17 (6.0)	40		
Pre - some					6 (0.9)	5.7	11 (3.0)	19.7	12 (6.1)	40.8
Pre - a lot							4 (1.1)	7.2	5 (2.0)	13.7
Pre - a great deal									3 (0.2)	11.1

Relationship Between Trapping and Conservation

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	13 (1.4)	9.2	24 (4.8)	31.9	71 (6.8)	45.2	58 (10.1)	67.1	27 (12.8)	85.4
Pre - little			2 (1.5)	10	7 (3.3)	22.1	17 (5.9)	39	4 (8.3)	55
Pre - some					6 (0.4)	2.8	13 (3.2)	21.3	12 (6.3)	42.2
Pre - a lot							4 (0.6)	4	5 (2.6)	17.3
Pre - a great deal									7 (0.7)	4.8

Trapping Skills and Techniques

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	4 (1.6)	10.8	36 (5.1)	34	93 (7.1)	47.1	57 (10.4)	69.6	35 (12.9)	85.8
Pre - little					5 (4.0)	26.7	8 (5.4)	35.8	2 (8.5)	56.7
Pre - some					5 (1.5)	10	6 (4.2)	27.8	8 (6.1)	40.8
Pre - a lot							4 (1.3)	8.3	3 (2.3)	15.6
Pre - a great deal									4 (0.3)	2.2

Angler Motivations

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	4 (2.3)	15	11 (4.2)	28	13 (6.5)	43.6	5 (10.8)	72	3 (12)	80
Pre - little			5 (0.7)	4.7	21 (2.3)	15.6	22 (5.1)	34	4 (8.1)	54.2
Pre - some					24 (1.2)	7.9	54 (3.2)	21.6	16 (5.8)	38.8
Pre - a lot							31 (0.9)	5.8	25 (1.5)	10
Pre - a great deal									31 (0.5)	3.3

Angler Demographics

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	7 (1.2)	8.1	13 (4.1)	27.1	21 (6.2)	41.4	5 (9.2)	61.3	4 (11.5)	76.7
Pre - little			9 (0.8)	5.5	23 (2.4)	16.2	26 (5.3)	35.1	4 (8.6)	57.5
Pre - some					27 (1.0)	6.8	39 (3.5)	23.4	19 (5.8)	38.6
Pre - a lot					1 (-1.5)	-10	24 (0.7)	5.0	25 (1.7)	11.4
Pre - a great deal									21 (0.4)	2.5

Relationship Between Fishing and Conservation

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	6 (1.2)	7.8	12 (3.5)	25.8	17 (6.1)	41	6 (9.5)	63.3	3 (11.7)	77.8
Pre - little			3 (0.7)	4.4	24 (2.5)	16.4	21 (5.7)	37.9	6 (8.0)	53.3
Pre - some					31 (1.0)	6.8	35 (3.3)	22.2	15 (5.9)	39
Pre - a lot							31 (1.0)	6.5	23 (1.6)	10.7
Pre - a great deal									36 (0.5)	3.1

Fishing Skills and Techniques

Knew	Post - very little	% Gain	Post - little	% Gain	Post - some	% Gain	Post - a lot	% Gain	Post - a great deal	% Gain
Pre - very little	8 (1.3)	8.3	17 (4.1)	27.1	15 (6.1)	40.6	10 (9.3)	61.7	1 (13)	86.7
Pre - little			14 (0.8)	5.5	28 (2.2)	14.5	14 (4.8)	32.2	3 (8.7)	58
Pre - some					36 (1.0)	6.8	35 (3.0)	20	5 (5.5)	36.7
Pre - a lot							32 (0.8)	5.3	23 (1.4)	9.3
Pre - a great deal									28 (0.5)	3.3

Appendix E: Follow-up Survey

Survey invitation email

Hello [NAME],

Conservation Leaders for Tomorrow (CLfT) is working to understand the long term impacts of our workshops for resource professionals. Our records indicate that you attended a workshop in [CITY] located at [LOCATION/VENUE]. We would benefit greatly from hearing from you and learning about your experiences since attending.

We hope you can find a few minutes to reflect on the CLfT workshop you attended and to let us know your thoughts. Linked below is a short survey that includes both multiple choice as well as open ended questions to allow us to capture specific program information and ensure your unique experiences are included in our analysis. We are constantly trying to improve the content and delivery of CLfT. Your insights and thoughts will be a very helpful in understanding past program out comes and improving future program offerings.

Thank you for your time,

[LINK TO ONLINE SURVEY]

Online Survey

(progressive, one question/page with a status bar)

1. Please tell us briefly your primary responsibilities in your current position?
 - a. Please write in your current position/title [TITLE] and make a single selection from the general classification of responsibilities below.
 - i. Executive Administration, Biologist/Ecologist, Forestry, Law Enforcement, Real Estate, Natural Resource/Land Management, Legal, Policy, Fisheries, Environmental Compliance, Support Staff, Licensing, Marketing, Outdoor Education/Recreation, R3 / Hunting Heritage, Academia/Education, or Other (-----)
2. In your professional responsibilities, have you found what you learned at the CLfT workshop to be:
 - a. Extremely useful; b. Very useful; c. Somewhat useful; d. Slightly useful; e. Not at all useful
3. Has CLfT training been important to your individual professional development?
 - a. Yes; b. No; c. Unsure
4. Do you include attending CLfT in your resume/CV?
 - a. Yes; b. No; c. I have not updated my resume/CV since attending the workshop

5. How important is a working knowledge of hunting to the development of a natural resources professional?
- a. Very important; b. Important; c. Unsure; d. Unimportant; e. Very unimportant
6. Do you think hunting will be a viable conservation tool in 25 years?
- a. Very likely; b. Likely; c. Unlikely; d. Very unlikely, e. Unsure.
7. Was your ability to consider hunting as a part of conservation planning or delivery enhanced by attending the CLfT workshop?
- a. Yes, the workshop did enhance my ability
- i. Please briefly explain and provide an example of when or how you applied what you learned at the CLfT workshop.
- b. No, it did not enhance my ability
- i. Please briefly explain why you don't think the workshop enhanced your ability to consider hunting as part of conservation.
8. As a result of the CLfT workshop, would you say your interactions with hunters, anglers and trappers has changed?
- a. Yes; b. No
- i. Follow up for either yes or no – Could you briefly tell us more, (and for yes) - or provide an example of how those interactions may have changed?
9. In looking back, please tell us what were the most/least valuable aspects of your CLfT training?
10. Is there anything in your career that has emerged that you wish would have been covered during CLfT?
11. Has CLfT's training impacted you in any other way (either personally or professionally)?
12. Finally, is there anything else you would like us to know?
13. Email

Results will only be presented in aggregate and your responses will remain confidential. Your email will allow us to keep track of who has responded to the survey. Thank you.

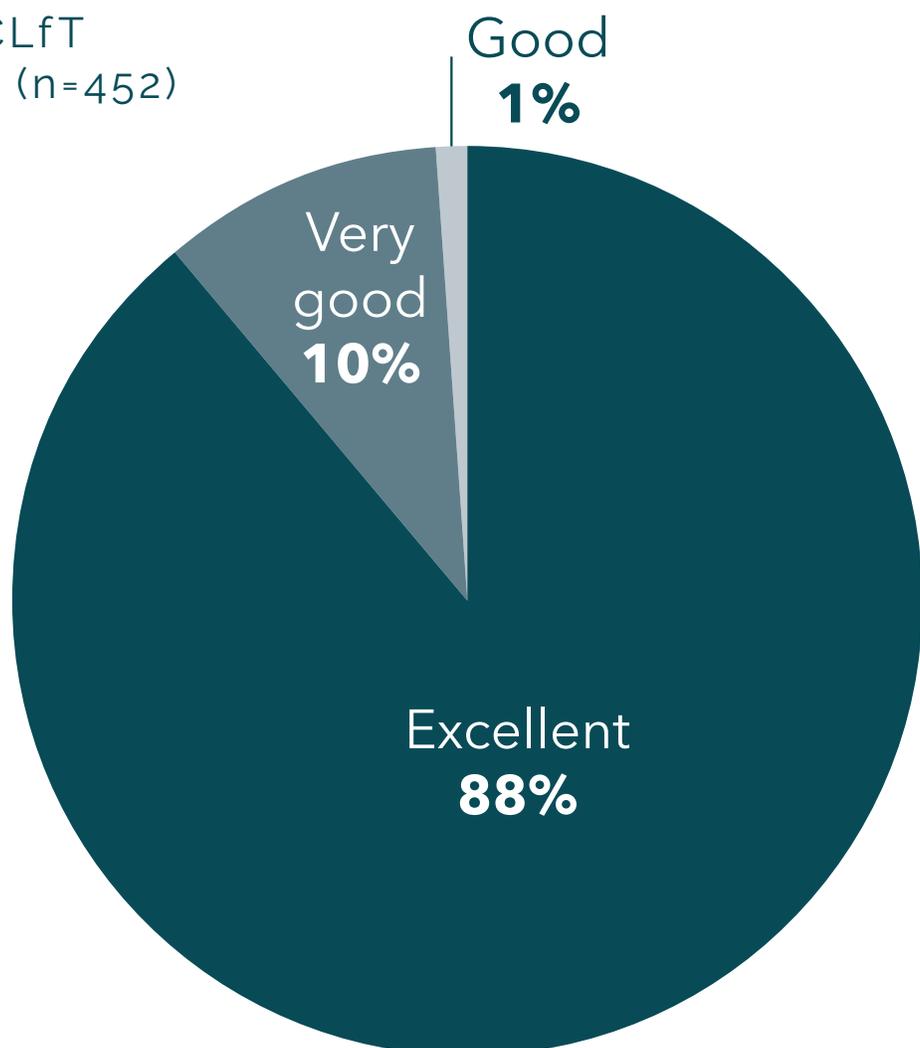
Appendix F: Student Workshop Assessment

Introduction

Prior to the implementation of the natural resource professional workshops, and still occurring concurrently with those workshops, CLfT provided workshop training to college students majoring in natural resource related fields. These students were recruited by faculty liaisons who were familiar with CLfT and the student body of each university. Approximately 45 universities have sent students to CLfT over the past 10 years all of which were selected using similar baseline criteria. Similar to the professionals, CLfT collected pre-workshop and post-workshop surveys to understand impact. Presented here is an abridged version of the student data following the same logic model used to understand the professional data presented in this report.

The student data demonstrates that reactions to the workshops by students are similar to professionals - they report a high amount of learning and leave the workshops with a better understanding of hunters and the role of hunting in conservation.

Students' overall CLfT
experience results (n=452)



Objective 1: “Right” participants are selected

Student participants came to the workshop with a range of familiarity with hunting and based from both academic teaching and personal experience. Generally, students are selected to attend who are non-hunters. Approximately 13% (58 out of 452) reported never hunting before the workshop but 53% (239 out of 452) did have friends or family members who hunt.

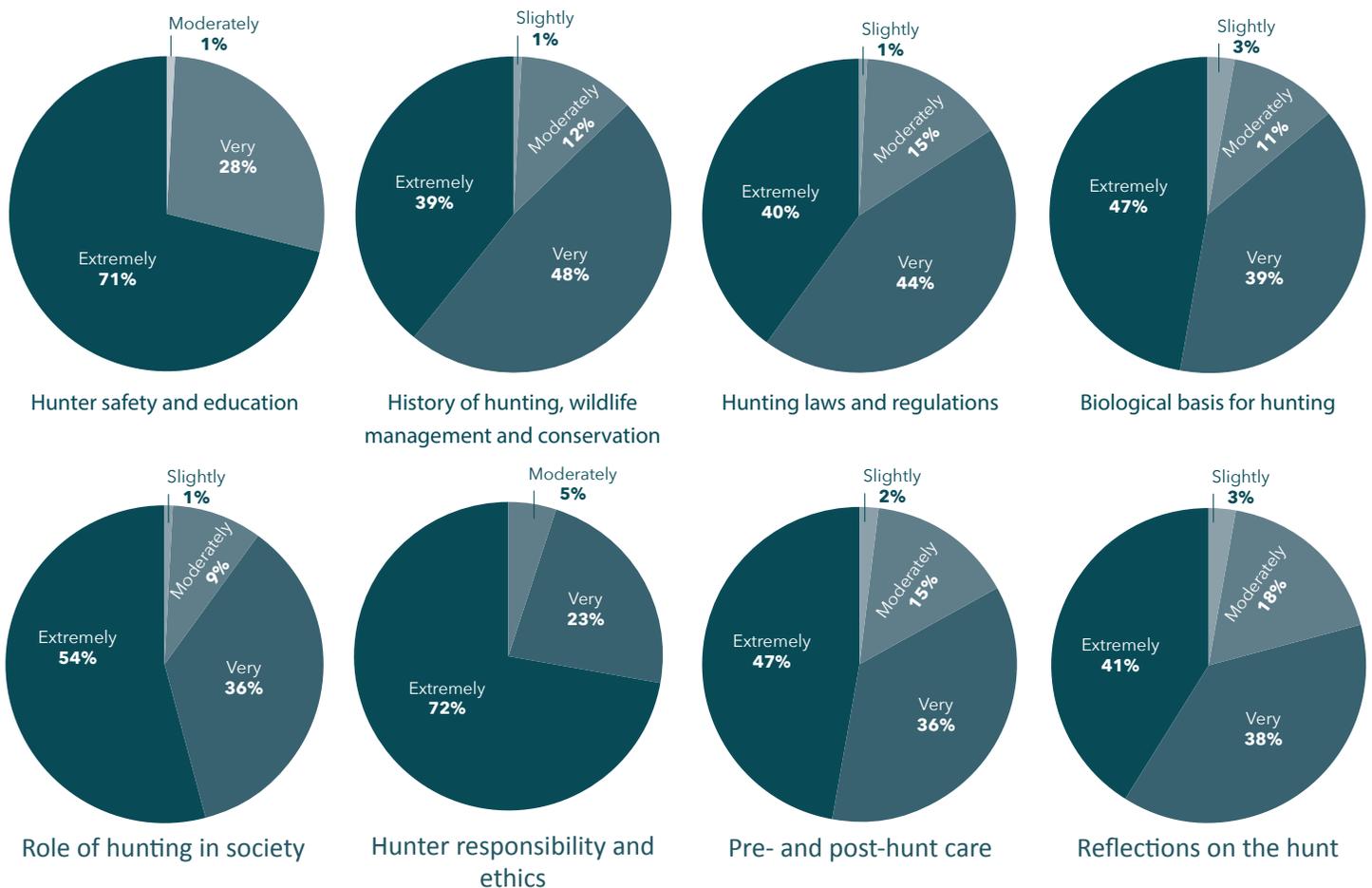
Objective 2: Workshop is a safe and open environment

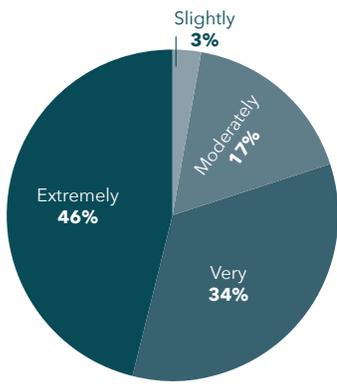
The students also demonstrated that the workshops, overall, provided positive learning environments (98% reported they felt very safe at the workshops; 97% reported they felt comfortable to ask question all or most of the time; and 100% said they received adequate feedback all or most of the time).

Objective 3: Participants establish a trusting rapport and relationship with instructors for the duration of the workshop

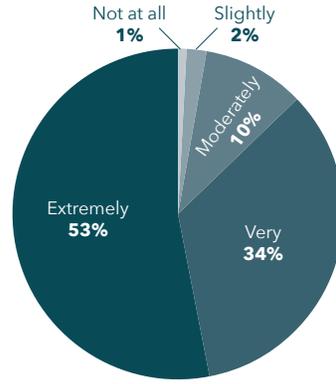
Again, as with the professional data, the reported level of satisfaction with the roundtables is used as a measure of comfort level and reaction to the instructors.

Level of satisfaction with roundtable discussions

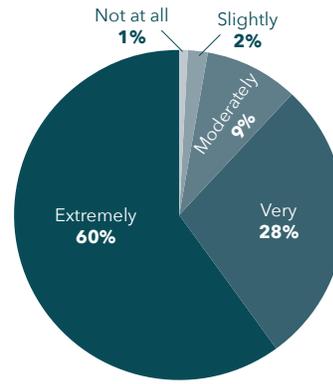




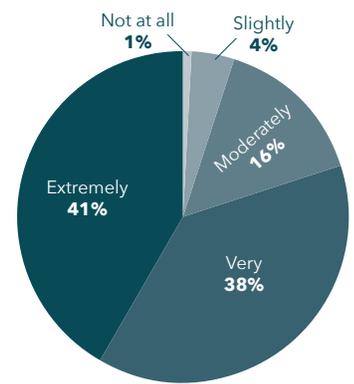
Preparation of game for the table



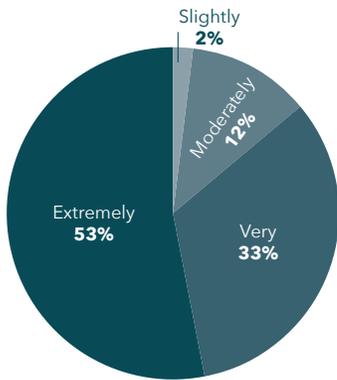
Contemporary management issues



Targeted discussion



Lingering issues



Lasting impressions

"I was second guessing coming to CLFT due to work and some recent personal issues. CLFT instructors were very friendly and welcoming. The hunt provided me with feeling of excitement and enthusiasm that I've struggled with finding lately."

Senior Education Biologist, Northeast US

"It is very difficult to put into words how much this workshop has taught me. So best said by thank you. You all have changed me forever."

Operations Coordinator, Southeast US

"During this week at CLFT a part of me has been awoken that's been asleep the past 18 yrs. I have a renewed ability as I can reach back to why I am in this field. My greater fear now is that I may start to forget this experience when I am back home."

Senior Zoologist, Northeast US

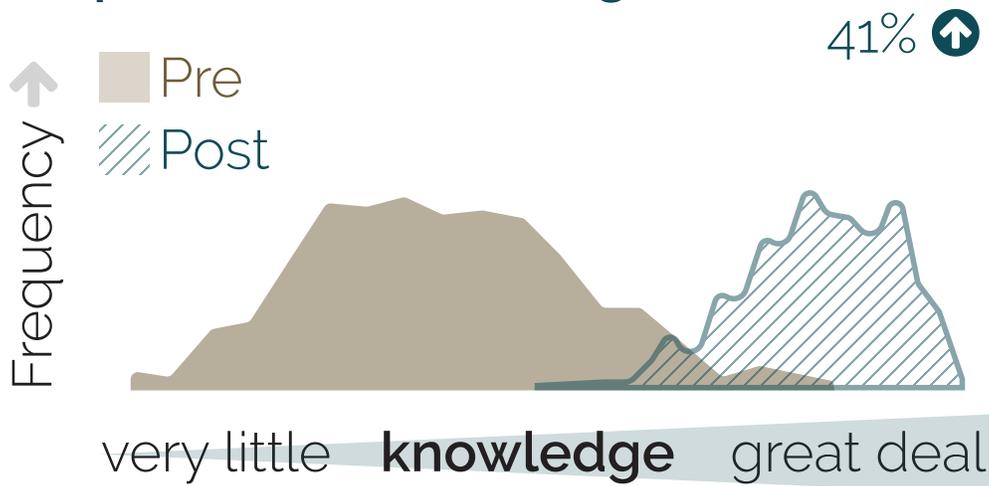
"This was an immensely powerful experience. Thank you for your culture of sensitivity as I explored my relationship with hunting/fishing and the loss of my sportsman father. I did a lot of healing and I will not forget this week."

Resources Scientist-Botanist, Midwest US

Objective 4: Initial outcomes

Again, for this objective as with the professionals, the comparison of perceived knowledge on relevant topics before and after the workshop was used for analysis. Students report a significant amount of knowledge gained in relevant topic areas (using paired t-tests all areas show a significant increase in knowledge at $p < 0.001$).

Aggregate changes in perceived knowledge



Topic	Avg perceived knowledge change	% perceived knowledge change
Hunter motivations	6.5	43%
Hunter demographics	5.1	34%
Relationship between hunting and conservation	4.4	29%
Safe handling of firearms	7.9	53%
Firearms use	7.9	53%
Hunting skills and techniques	8.1	54%
Biological basis for hunting	3.9	26%
Cultural values of hunting	5.5	37%
Ecological values of hunting	3.8	25%
Hunter responsibilities to their quarry	6.7	45%
Fair chase issues	7.4	49%
Potential ethical dilemmas faced by hunters	7.7	51%
Hunter responsibilities to others	7.0	47%
Historic impact of hunters as conservationists	5.0	33%
Hunter responsibilities to the land	5.6	37%
Potential for hunters to be conservation advocates	5.7	38%

Objective 4.2: Participants are familiar with hunting skills, knowledge and techniques

With the student data, as with the professional, we looked at how those who came to the workshop apprehensive about handling firearms or feeling that hunting was unsafe felt after the workshop.

Before the workshop, 98 students reported feeling apprehensive to handle firearms and 16 reported feeling uncomfortable. The workshops had a powerful impact on these students:

- 25 went from apprehensive to a bit more comfortable handling firearms
- 68 went from apprehensive to a great deal more comfortable
- 4 went from uncomfortable to a bit more comfortable
- 12 went from uncomfortable to a great deal more comfortable

Before the workshop, 11 students reported that they thought hunting was unsafe. After the workshop:

- 2 said hunting was very safe
- 8 said hunting was safe
- 1 still felt hunting was unsafe

Objective 4.3: Participants are familiar with historic role of hunters and conservation

Of the 95 students who prior to the workshop said it was unlikely to very unlikely that hunting would be a viable conservation tool in 25 years, 84% of them said after the workshop they thought hunting would indeed be a viable conservation tool ($p < 0.0001$).

Final Objective 4: Participants are familiar with ethical dilemmas that hunters grapple with

98% of participants said that the workshops provided them with the opportunity to better understand the professional and personal motivations of hunters.

97% said they believed hunters were “very much” to “somewhat” concerned about their ethical conduct in the field.

97% said the ethical dilemmas faced by hunters were “broad” to “complex”.

Conclusion

Just like the professional results presented throughout this report, the student data demonstrates the positive impact of the CLfT workshops on participant’s views of hunting, hunters, and the role of hunting in conservation. Much of the results from the student data are nearly identical to the professionals and demonstrate the overall success of the CLfT workshop model in supporting and furthering the role of hunting for conservation and the role these workshops have in the training of future agency professionals.