AFS Symposium Presenters and Presentation Titles

“Fisheries Sustainability, Crime, and Enforcement: Whodunnit and How Do We Manage It?”

1. *Law Enforcement: A Critical Management Tool for Ensuring Fisheries Sustainability*
   Molly J. Good, William Taylor, and Ed McGarrell
   Michigan State University
   East Lansing, Michigan

**Presenter Biography:** Molly J. Good is a doctoral student in the Center of Systems Integration and Sustainability in the Department of Fisheries and Wildlife at Michigan State University. She has a B.S. in Fisheries and Wildlife from MSU and a M.S. in Marine and Environmental Affairs from the University of Washington. She is currently working on her doctoral degree with Dr. Bill Taylor and Dr. Ed McGarrell from the School of Criminal Justice on fisheries governance and enforcement issues.

**Abstract:** Law enforcement, which includes the detection, prevention, and investigation of criminal acts, is largely a process by which individuals and agencies are responsible and accountable for enforcing existing laws (*i.e.*, rules and regulations). Through law enforcement methodologies and actions, public resources can be maintained and protected. In the field of fisheries management and conservation, fisheries professionals and conservation officers utilize law enforcement strategies as tools to maintain and enhance aquatic ecosystem integrity and productivity, allowing for the sustainability of fisheries resources and continued commercial, recreational, and artisanal use. Though law enforcement has the potential to effectively maintain fish populations, their habitat, and the ecosystem services they provide from violations of existing environmental laws and fisheries policies, law enforcement is often underrepresented, underfunded, and overlooked as a critical management tool for ensuring fisheries sustainability. To reverse this, federal, state, provincial, tribal, and international agencies should strive to bolster their capacity and support for enforcement actions, seek out new and diverse technologies, and work in concert with non-governmental organizations and local citizens to educate and promote compliance with rules and regulations intended to maintain healthy, sustainable fish populations.

   Marc Gaden
   Great Lakes Fishery Commission
   Ann Arbor, Michigan

**Presenter Biography:** Dr. Marc Gaden is Communications Director and Legislative Liaison for the Great Lakes Fishery Commission. He holds adjunct appointments at Michigan State University and the University of Michigan. He received his Ph.D. in natural resource policy and behavior from the University of Michigan in 2007.
Abstract: Fishery management authority on the Great Lakes is spread among eight states, the Province of Ontario, and Native American tribes. Primary management responsibility rests with these sub-national governments, and no overarching authority exists to compel them to cooperate. The jurisdictions face conflict over their fishery management, as they have differing management philosophies, needs, constituent pressures, and political dynamics. To work within this paradigm, the jurisdictions adhere to A Joint Strategic Plan for Management of Great Lakes Fisheries, a non-binding, consensus-based agreement. This paper presents the Joint Strategic Plan as an institution for collective action, with a special emphasis on cooperative law enforcement through the plan’s structures.

3. Strengthening the Weakest Link: The Role of Law Enforcement in Protecting Multi-Jurisdictional Waters from Aquatic Invasions
   Jill Wingfield and Kevin Ramsey
   Great Lakes Fishery Commission
   Ann Arbor, Michigan

Presenter Biography: Jill Wingfield is the Communications Program Manager at the Great Lakes Fishery Commission. She assists with development and implementation of the communications program and commission policies. She also served as the secretariat liaison to the Great Lakes Law Enforcement Committee. Jill received a joint Master’s degree from the School of Criminal Justice and the Department of Fisheries and Wildlife at Michigan State University. Her research focused on the regulation and enforcement of injurious species within the Great Lakes Basin.

Abstract: The intentional or unintentional release of aquatic invasive species (AIS) constitutes one of the greatest threats to the future of the Great Lakes. Four of the five primary vectors of AIS importation in the Great Lakes basin: maritime commerce, organisms in trade, aquaculture, and recreational activities (excludes canals and waterways) are regulated by provincial, tribal, state, and federal statues and rely on law enforcement to deter violations and promote compliance. One of the most common misconceptions about law enforcement is that the mere existence of regulations or the presence of officers in the field is enough; on the contrary, successful fisheries management requires the involvement of enforcement throughout the management process to ensure that management objectives, regulations, and the expected role of enforcement are clearly defined and commensurate. Perhaps nowhere is this principle truer, and more tested, than in the Great Lakes basin. Here, the world’s largest source of freshwater and an industry that is worth more than $7 billion annually, is only as protected as the weakest, least enforced, and/or most violated regulation that exists among the many jurisdictions that share fisheries management responsibility and law enforcement authority.

4. Tribal Fisheries Enforcement
   Mitch Hicks
   Law Enforcement, Columbia River Inter-Tribal Fish Commission
   Hood River, Oregon
**Presenter Biography:** Mitchell Hicks is a citizen of the Shoshone-Bannock Tribes of Idaho, and he is the Chief of Police for the Columbia River Inter-Tribal Fish Commission with over 22 years of fish and wildlife law enforcement experience throughout the Columbia Basin.

**Abstract:** What are law enforcement "best practices," and how do/have they increase/ed compliance? Compliance with enforcement rules and regulations provides some assurances that biological and management objectives may be achieved. From a tribal perspective, with regard to anadromous fish, the regulatory field is viewed in a “gravel to gravel” or life cycle panorama. Few, if any, law enforcement agencies have stand-alone capacity to enforce all of the rules and regulations from gravel to gravel that are in place today. The importance for partnerships with citizens, non-governmental organizations, and peer agencies to develop “best practices” throughout the panorama is vital. What are law enforcement “best practices?” They may be best defined as internal and external procedural “outcomes.” Outcomes are defined as decreases in the rate or severity of offenses, decreases in the harm to communities as a result of crime, increases in the level of victim satisfaction with the justice system, and increases in the level of public confidence in the justice system. How can “best practices” increase compliance with rules and regulations? Best practices demonstrate procedural justice consistency, outcomes are repeatable, and the legitimacy of authority is more accepted when the public believes rules and regulations are fair and justifiable.

6. **Marine Fisheries Enforcement: Salty Tales of Fraud, Forensics, and Justice**
   Piper Schwenke, Trey Knott, Kathy Moore, and Linda K. Park
   Northwest Fisheries Science Center, NOAA Fisheries
   Seattle, Washington

**Presenter Biography:** Piper Schwenke works for NOAA at the Northwest Fisheries Science Center in Seattle, WA. She received her Master’s Degree from the University of Washington’s School of Aquatic and Fishery Sciences and her Bachelor of Science at Nebraska Wesleyan University in Biology. Piper has been working as a Forensic Molecular Geneticist for 18 years and has been a certified as a Wildlife Forensic Scientist.

**Abstract:** NOAA Fisheries Office for Law Enforcement (OLE) is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. NOAA Fisheries OLE focus on four approaches to enforcement: 1) civil and criminal investigation and patrols, 2) community oriented policing 3) Vessel Management System, and 4) partnering with government and non-government agencies. Furthermore, NOAA enforcement activities are conducted under laws such as the Endangered Species Act (ESA), Lacey Act Amendment (seafood mislabeling), and International Trade in Endangered Species of Wild Fauna and Flora (CITES). The Northwest Fisheries Science Center Forensic Laboratory provides forensic science to support NOAA Fisheries OLE during various criminal and civil investigations. The majority of the analyses we provide involve molecular genetic approaches for species and
taxonomic identification. We also provide morphologic identification and assist OLE in obtaining chemical and pathology analyses. Here we present forensic case studies as examples of fisheries enforcement through stories of habitat loss, food mislabeling, and fish kills in the wild.

7. **Forensic Science and Fisheries Crimes: Beyond CSI**
   Mary K. Burnham-Curtis
   National Fish and Wildlife Forensic Laboratory, U.S. Fish and Wildlife Service
   Ashland, Oregon

**Presenter Biography:** Mary works for the U.S. Fish and Wildlife Service (USFWS) Office of Law Enforcement as a Senior Forensic Scientist for the Service’s National Fish and Wildlife Forensic Lab in Ashland, Oregon. Prior to this, she spent 13 years at what is now the USGS Great Lakes Science Center in Ann Arbor, Michigan, where she earned her Ph.D. from the University of Michigan. Mary is currently the first Vice President of the Society for Wildlife Forensic Science and Vice Chair of the Wildlife Forensic Subcommittee of the Organization of Scientific Area Committees.

**Abstract:** In a time of expanded worldwide wildlife trafficking, wildlife crimes have increasingly become the focus of law enforcement on both national and international levels. Included among the various wildlife offenses is a diverse array of fisheries crimes that violate State, Federal, or international laws and treaties. These crimes may range from simple sport fishing over-limit violations to violations of laws that protect endangered fishes, to the involvement of organized crime in black market trafficking of caviar and fish parts. Proving that criminal violations have occurred requires the coordinated efforts of wildlife law enforcement agents, prosecuting attorneys familiar with natural resource laws, and wildlife forensic scientists. Scientific testing and expert testimony is often requested by the courts for wildlife crime prosecutions to determine species identity of an evidence item or to establish a link between the evidence, the crime scene, and a suspect. The discussion will include an overview of fisheries crimes and illustrate the unique role of forensic science in fisheries crime investigations; case studies of fisheries crimes and their potential impact on the resource will also be presented.

8. **Illegal Harvest of Marine Resources on Andros Island and the Legacy of Colonialism**
   Elizabeth Silvy, M. Nils Peterson, Brian Langerhans, Casey Story, and Emma Johnson
   Texas A&M University; Forestry and Environmental Resources, North Carolina State University; Department of Biological Sciences, North Carolina State University; Public Relations, North Carolina State University; Human Biology, North Carolina State University
   College Station, Texas; Raleigh, North Carolina; Raleigh, North Carolina; Raleigh, North Carolina; Raleigh, North Carolina
Presenter Biography: Elizabeth is a Master’s student in the Department of Wildlife and Fisheries Sciences at Texas A&M University. She is currently working on determining the factors affecting Dermo disease of oysters in Galveston Bay, Texas.

Abstract: Illegal harvest of marine resources is a major global conservation challenge. Illegal harvest reflects many complex phenomena, but colonialism presents an intriguing and relatively underexplored driver. We use a qualitative case study on Andros, Island, The Bahamas to explore illegal harvest of marine resources through the lens of colonialism. We interviewed 31 people in July 2013 and 31 people in June 2014, conducted participant observation, and took extensive field notes. We found illegal harvest of marine resources was ubiquitous, and driven by factors frequently identified in the literature (e.g., economic need, lack of enforcement), but also saw reflections of centuries of colonialism mixed with the unique ecology of the Bahamas. Specifically, many informants relied on marine resources for subsistence because soils were too poor for agriculture, and only turned to other forms of sustenance during boom times when employment and capital trickled into the “out islands.” Illegal harvest was stigmatized when conducted by residents of “in islands”, and called poaching and likened to “raping the sea”, when conducted by foreigners. These findings suggest an increased focus on coupled socio-ecological history would benefit research on illegal harvest of marine resources.


Dana Haggarty, Jonathan Shurin, and Steve Martell
Biodiversity Research Centre, University of British Columbia; Biological Sciences, University of California at San Diego; Fisheries Centre, International Pacific Halibut Commission
Nanaimo, BC, Canada; San Diego, California; BC, Canada

Presenter Biography: Dana is a marine biologist from Vancouver Island, BC. She has a B.Sc. from the University of Victoria, and M.Sc. from the University of British Columbia, and she plans to defend her dissertation at UBC this fall.

Abstract: Compliance with spatial fishing regulations is one of the most important determinants of ecological recovery, yet is rarely measured. We used aerial creel survey observations of recreational fishing events to measure fishing effort in and around 77 Rockfish Conservation Areas (RCAs) in British Columbia before, during and after the RCAs in the Strait of Georgia were established. There was no evidence of a change in fishing effort in 83% of the RCAs and effort in 5 RCAs increased after establishment. Fishing effort in open areas adjacent to the RCAs declined with time and was higher than effort in the RCA in all three years. We also studied the drivers of compliance using a Generalized Additive Model and compliance data for 105 RCAs around Vancouver Island. Compliance was influenced by the level of fishing effort around the RCA, the size and perimeter to area ratio of RCAs, proximity to fishing lodges and the level of enforcement. Non-compliance in RCAs may be hampering the effectiveness of RCAs and
impeding the recovery of rockfish populations. Our results indicate that efforts at reducing fishing effort inside protected areas in Canadian waters through education and enforcement are critical to the recovery of depleted fish stocks.

Mark Robbins and Brad Gerrie
Ontario Ministry of Natural Resources and Forestry

**Presenter Biography:** Conservation Officer Mark Robbins is a Provincial Enforcement Specialist with the Enforcement Branch of the Ontario Ministry of Natural Resources and Forestry. He has been working as a field officer, an educator and an enforcement advisor since 1982. Mark is currently the chair of the Great Lakes Fishery Commission Law Enforcement Committee.

**Abstract:** Effective fisheries law enforcement seeks to promote reasonably compliant behavior by increasing public and/or industry awareness of the risks associated with non-compliance and by increasing voluntary compliance to reduce those risks. A discussion about the future of fisheries enforcement first requires an examination of how success is measured, what type(s) of information or intelligence promotes positive enforcement action, and how the roles and responsibilities of conservation officers may be influenced by these determinations. Advances in technologies, too, hold great potential to steer the direction of the future of fisheries enforcement. This point becomes particularly relevant as resources dedicated to enforcement become increasingly limited and the supply of, and demand for, fishery resources continually increases thereby enhancing the incentive to act outside of the law. Case studies will be used to illustrate how technology has furthered enforcement efforts as well as how the lack of technology has hindered enforcement capabilities. In this climate of “do more with less,” the future of fisheries enforcement will indeed require a concerted effort to develop and use new technologies; however, this must be done with the recognition that technology is an enforcement tool and not a replacement for trained, dedicated officers in the field.