

Stephanie Otts: Good afternoon everyone. Thank you so much for joining us today for the first in the National Sea Grant Law Center's summer webinar series to highlight the research results from our collaborative project on legal barriers and challenges to shellfish aquaculture in the United States. Today we're focusing on sharing the results from two of our case studies that we did here at the National Sea Grant Law Center - Nationwide Permit 48 and the Endangered Species Act. But before we get started, I just wanted to give a little bit of background on the project.

Stephanie Otts: So, for those of you that don't know me, I'm Stephanie Otts. I'm the director of The National Sea Grant Law Center. We're based here at the University of Mississippi. This is a large collaboration among a variety of Sea Grant programs including the Rhode Island Sea Grant Legal Program at Roger Williams University School of Law, the Virginia Coastal Policy Center at William and Mary Law School, the Carl Vinson Institute of Government at the University of Georgia and the California Sea Grant Program. Throughout the summer in the different webinars you'll be hearing the results of each of their projects. So, this project was funded by NOAA Sea Grant in 2017 and the overall project objectives were to identify priority law and policy barriers to expansion of shellfish operations in coastal communities around the country, to conduct legal analysis and research on those barriers that were identified and then to implement outreach programming related to that.

Stephanie Otts: So, we're now in the outreach phase. We have identified, produced six case studies related ... No. Eight. Eight case studies related to this project and that's what we'll be hearing about today and throughout the summer and we also have a project webpage for the project and so if you're interested at all about learning more about this project, we encourage you to visit The National Sea Grant Law Center's website and learn about this project specifically and with that, I want to turn it over to our National Sea Grant Law Center staff attorneys, Catherine Janasie and Amanda Nichols who will be talking about their case studies.

Amanda Nichols: Done on this case study was done in late 2017 and early 2018 as this case study was one of the first that was published as part of the shellfish project. So, anything after that is not contained within this case study or this presentation. Just to give you a little bit of a rundown of what I will be presenting on, during this presentation, first of all, I will give everyone an introduction to the permitting structure that governs shellfish aquaculture as per the Army Corps of Engineers which is the permitting structure that my case study deals with. Then I'll give everyone a brief summary of Nationwide Permit 48 as well as a little bit of explanation into the controversy behind the 2017 reissuance and then finally I will go into a discussion of remaining legal barriers to shellfish aquaculture that still exist despite the favorable language of Nationwide Permit 48.

Amanda Nichols: So, just to get started with this introductory material here today, some of the federal laws governing near shore shellfish aquaculture, the two that we're

concerned with today are firstly The Clean Water Act. Section 404 specifically gives the Corps regulatory authority over activities involving the discharge of dredge and fill materials into navigable waters. Section 404 prohibits that discharge into waters of the United States without a Corps permit. Secondly, the Rivers and Harbors Act, specifically section 10, prohibits the obstruction or alteration of navigable waters in the United States without a Corps permit. It's important to note the Corps has combined these permitting processes for the Clean Water Act section 404 and the Rivers and Harbors act section 10 and that combined process is what we're dealing with today.

Amanda Nichols: It's also important to note, however, that aquaculturists have to comply with other federal permitting frameworks such as The Endangered Species Act and the National Historic Preservation Act, but those are just not the focus of this case study. So, really just the Clean Water Act and the Rivers and Harbors Act. Now, a little bit of background information into that permitting scheme in general that is administered by the Corps for shellfish aquaculture. So, the Corps will issue two different categories of permits. The first being individual or standard permits and the second being general permits. These two categories of permits differ in one main way.

Amanda Nichols: Individual permits are issued when they're thought to be significant impacts to wetlands, streams and other aquatic resources associated with the proposed project, while general permits are issued when there are thought to only be minimal individual and cumulative impacts. A few more facts about the individual permits. They are regionally specific. They can also be more expensive and time consuming. This is because they require a case by case evaluation and also the submission of detailed documentation regarding the project scope, design, construction and operation. On to general permits, there are three subtypes of these. The first being nationwide permits. The second, regional general permits, and the third, programmatic general permits.

Amanda Nichols: It's important to note that not all 38 districts use all types of general permits and some districts have implemented regional restrictions or conditions to those permits. A little bit of information in general about nationwide permits. This is just general information not specific to Nationwide Permit 48, but Nationwide Permits authorize activities on a national level. There are currently 54 of them. They are renewed and reissued every five years for updates and to provide clarity and certainty for the public while protecting the aquatic environment. The most recent renewal was finalized in March of 2017. These nationwide permits have varying applicability due to a number of factors. The first one being that Corps district commanders have the power to revoke a nationwide permit in a state or other geographic area for various reasons including due to potential adverse environmental impacts that a proposed project could cause.

Amanda Nichols: States also have some authority to prohibit that application of nationwide permits as we'll talk about a little bit later. So, exercising limiting authority in

these ways can result in a patchwork of nationwide permit coverage across the many districts and states. So, just because a nationwide permit exists doesn't mean that it actually applies in any or all districts. Regional general permits are like nationwide permits but they only apply within a specific geographic area. These permits are proposed by districts and the application procedures for them vary from place to place. Just in the way of example, in the Baltimore district, they have implemented an RGP entitled RGP-1 in 2011 which regulates new commercial research and educational bivalve shellfish aquaculture activities in Maryland tidal waters.

Amanda Nichols: That RGP provided a more streamline authorization process for some oyster aquaculture activities. However, that permit has since expired and been replaced with the 2012 language of Nationwide Permit 48 in addition to several regional conditions. Now, programmatic general permits, or PGPs, are unlike nationwide permits or regional general permits in that they are based on existing state, local or other federal programs and are designed to eliminate redundant Corps and state regulatory efforts that provide similar protections to aquatic resources. In some states, PGPs have replaced some or all of the Corps's NWP's which can result in greater overall efficiency in some instances.

Amanda Nichols: So, for example, in the Jacksonville district, they have implemented SAJ-71 which authorizes the deposition of materials for live rock aquaculture within federal waters off the Florida coast. This permit is administered by the National Marine Fishery Service through an operating agreement with the Corps that gives it general authority to administer the permit. So, one can see how this is a more efficient process in some cases. Now on to the meat of why we're really here today - Nationwide Permit 48. So, Nationwide Permit 48 briefly authorizes commercial shellfish to aquaculture activities that are predicted to have minimum individual and cumulative impacts.

Amanda Nichols: It also authorizes the installation of equipment and discharges of dredged or fill materials into waters of the United States. Some of the controversies surrounding the 2017 reissued version of Nationwide Permit 48 centered around its delineation between new and existing commercial shellfish aquaculture operations. So, the 2017 version of Nationwide Permit 48 promulgated a new definition of "new operations" which means new operations now are considered those where shellfish aquaculture activities have not occurred at any point during the last 100 years.

Amanda Nichols: So, an operation would be "existing" if any aquaculture activity has occurred there in the last 100 years. This matters because of preconstruction notification or PCN which is additional information submission requirements that are required for new operations. Existing operations don't have to submit PCN unless the aquaculture that they are proposing will include a species that's never been cultivated in the body of water in question. This spurred controversy because of the potential outlying situations that could occur if we go strictly by what the reissued language of the 2017 version of Nationwide Permit 48 says.

Amanda Nichols: So, for example an existing operation could be one just hypothetically that may have been used for aquaculture, say, 75 years ago and only in one square acre and then aquaculture halted in that parcel up until present when someone is trying to again do aquaculture on that parcel. So, really there's been controversy about whether it makes sense to let those outlying situations proceed because of the practicality considerations. But it's important to remember that submitting documentation to prove that a site actually is existing may be onerous or impossible in a lot of those outlying instances. This is because it's hard to locate evidence of property surveys that existed in decades past or other evidence that you would need to show to prove that a site is actually an existing site.

Amanda Nichols: It's also important to note before we move on that Nationwide Permit 48 is not applied uniformly throughout all U.S. States. Just as I mentioned in the background information with the general nationwide permits, they can be approved, conditionally approved or completely denied depending on where you are. For the remainder of my time, I'm going to explore some of the remaining legal barriers to shellfish aquaculture despite the favorable language and expeditious process that Nationwide Permit 48 fosters. So, the first of these have to do with state review of Corps permits. Section 401(d) of the Clean Water Act sets forth certain water quality certification requirements that note applicants for a federal license or permit must provide certification from a state that any discharges will comply with state water quality standards and other applicable state authorities.

Amanda Nichols: So, states can approve, condition, or deny this section 401(d) certification, and, if denied, the federal agency may not issue a license or a permit preventing an aquaculture site from going into operation, potentially, even if they have obtained all of their other permits and are great in every other respect. So, the CZMA federal consistency provisions are similar to that. Section 307 of the CZMA requires that federal actions, including federally permitted activities, that have reasonably foreseeable effects on any coastal use or natural resources of the coastal zone be consistent with the enforceable policies of the state's federally approved coastal management program. This is what's known as "federal consistency."

Amanda Nichols: So, states can choose to approve, condition or deny federal consistency and states approving a federal permitting activity will grant what's known as a concurrence. But if a state declines to grant a concurrence, the federal agency is prohibited from issuing the permit meaning that an aquaculture farm could not begin operating again even if they had all of their other ducks in a row. Just by way of example here, Mississippi has declined to grant a concurrence for any nationwide permits located in several listed categories of waters and requires applicants wishing to conduct aquaculture activities in those waters to first contact it for authorization. So, if the Mississippi Department of Marine Resources declined to provide a concurrence, an aquaculture project could be

prohibited from operating in the state even if that project otherwise qualifies for authorization under a general permit.

Amanda Nichols: So, we can see how hangups can come about despite the existence of Nationwide Permit 48. Another category of potential barriers here have to do with regional and state implementation. So, as I mentioned a little bit earlier, district commanders in the Corps have a revocation power when it comes to nationwide permits. For example, the New England district of the Corps has fully suspended nationwide permits and replaced them with general permits in each state, so it doesn't matter how familiar you are with federal Corps permits at that level. It depends on how familiar you are with district permits and those processes. States also have a limitation power. They have a broad authority to enact laws and regulations to protect natural resources as well as an authority to develop leasing programs for shellfish aquaculture.

Amanda Nichols: So, some of these laws may be helpful and often times are, but some may also pose barriers. For example, in Connecticut, the state has implemented certain buoy placement guidelines that were established by the state Department of Energy and Environmental Protection's boating division. These buoy placement guidelines are meant to protect boaters and prevent accidents. But the Corps has implemented separate marking guidelines for shellfish aquaculture sites, and if a site follows one of these and not the other, for example, they could experience a delay and be held up on the back end from beginning operations even if everything else is great with their permit and whatnot.

Amanda Nichols: Finally, the last category of barriers here have to do with legal challenges. As one might expect, these, if successful, can also pose significant problems to beginning operation of aquaculture sites. I've put up two pending legal challenges here for y'all to see as well as their docket numbers so you can go and read the complaints if you would like. As of a few days ago when I checked, these are both still active cases and they both have to do with Nationwide Permit 48. So, I will just briefly kind of go through what the parties are alleging in these complaints. In the first one, the Center for Food Safety's complaint against the Seattle District of the Army Corps. A little bit of background information of that is that when the 2017 version of Nationwide Permit 48 was issued, the Seattle district of the Corps chose to implement only one regional condition after it approved the permit and this had to do with prohibiting the commercial harvest of clams by hydraulic escalator.

Amanda Nichols: Well, when the Center For Food Safety found this out, they filed a legal complaint arguing that Nationwide Permit 48's revised definition of a new operation would allow shellfish aquaculture acreage in the state to double to an estimated 72,300 acres, constituting 1/3 of the state's shorelines. This is an increase in acreage that the Center For Food Safety said would increase any negative environmental impacts that shellfish aquaculture could have on the state's coastlines. The Center for Food Safety also asserts in their case that the Corps did not fully consider the environmental impacts of Nationwide Permit 48

in a way that violated the Clean Water Act, NEPA and the APA. They're arguing that the district should have imposed additional regional conditions to mitigate environmental harm above and beyond that one related to the harvest of clams by hydraulic escalator.

Amanda Nichols: So, the Center for Food Safety wants the court to vacate the Seattle district's decision regarding Nationwide Permit 48, which, as one might expect, could severely impact aquaculture in the state if this case is successful. Moving on to the second complaint here filed by the Swinomish Indian Tribal Community against the Corps, federally, the Seattle district and the National Marine Fisheries Service or NMFS. The Swinomish Indian Tribal Community here takes issue with Nationwide Permit 48's inadequate protection of eelgrass, which the Seattle district in the Swinomish Indian Tribal Community's opinion failed to mitigate by imposing regional conditions to Nationwide Permit 48 above and beyond, again, that one condition.

Amanda Nichols: So, the tribe wants to have the court vacate and set aside Nationwide Permit 48 as applicable to native eelgrass beds in north Puget Sound. So, again, the outcome here could also create significant challenges for aquaculture stakeholders in successfully permitting and operating shellfish farms if successful. So, important to keep an eye on legal challenges. Maybe, specifically, these two would be good to keep an eye on as well. With that, I would just like to conclude kind of by saying that Nationwide Permit 48, as exemplified by the presence of these existing legal barriers, despite its favorable language, is not always the final answer for shellfish aquaculturists.

Amanda Nichols: As a result, those aquaculturists should be aware of limiting factors that are imposed by Corps districts and states on both the front and the back ends in order to have the best chance of getting their operations up and running as quickly and efficiently as possible. With that, I'm going to hand it over to my colleague, Cathy Janasie, who is going to present to you all today on The Endangered Species Act and the Red Knot. Thank you.

Cathy Janasie: All right. Thank you Amanda. Just as a housekeeping note, we're going to do questions at the end of both of our presentations so if you had a question based on Amanda's presentation, you can put it in the chat box now and we will address those questions again at the end of both of our presentations. So, I'm Cathy Janasie. I'm here today to present my case study which focused on The Endangered Species Act and in particular the impact of the listing of the Red Knot on oyster aquaculture operations in New Jersey. So, The Endangered Species Act can present a regulatory hurdle for both new and established aquaculture operations. If a species is already listed in the area, a perspective farmer may have trouble securing the necessary permits and approvals needed to get a farm up and running due to the potential impacts on the species in question.

Cathy Janasie: The ESA can also have implications for established operations if a species is newly listed in the area. As I mentioned in New Jersey, the listing of the Red Knot has already impacted aquaculture operations in this state. However, the act's terms in how the different sections work together can be confusing for those who are unfamiliar with the endangered species act. So, using the Red Knot case study as an example I want to give a broad overview of ESA today including its purpose, it's listing and critical habitat designation process and its consultation intake provisions.

Cathy Janasie: So the Red Knot was the subject of a project I worked on with New Jersey Sea Grant. The Red Knot is a little shore bird weighing less than a cup of coffee. It's truly a master of long distance aviation. On wing spans of 20 inches, Red Knots fly more than 9000 miles from south to north every spring and repeat that trip in reverse every autumn making this bird one of the longest distance migrants in the animal kingdom. About nine inches long, Red Knots are among the largest of the small sand pipers. The lower Delaware Bay shoreline in Cape [inaudible 00:21:39] county, New Jersey serves as a center of a recovering oyster aquaculture industry with historic roots. Contemporary oyster farming is a relatively small but growing industry.

Cathy Janasie: In 2016, 19 farms sold over two million oysters with a farm gate value of around \$1.4 million. Structural aquaculture uses gear to contain seed oysters as they are raised for cultivation purposes and these structures including rebar racks, mesh bags, cages and floats all need permits from the US army corps of engineers and the state of New Jersey. Now, to promote the development of oyster aquaculture in New Jersey, the state developed an aquaculture development zone in the mid 2000s. The ADZ is intended to ease permitting burdens on potential oyster farms and locate farms in areas with a few issues complex. The ACCS meant to streamline the permitting process for farmers, as the New Jersey bureau of shellfisheries obtains the necessary permits from the corps and relevant state agencies on behalf of the individual growers.

Cathy Janasie: So, in addition to being home to the oyster industry, Delaware Bay is also an important stop over location for migratory shore birds including the Red Knot. The Red Knot's listing as a threatened species on the Endangered Species Act has already impacted the oyster industry and in particular, concerns have been merged about how structural oyster aquaculture will affect the Red Knot in a major knot food source, horseshoe crab eggs. So, the Endangered Species Act was passed by congress in 1973 with only four no votes and is administered by the US Fish and Wildlife Service in the department of interior for terrestrial species and by the National Marine Fishery services in the department of commerce for listed marine species.

Cathy Janasie: Congress passed the ESA to protect both imperiled species and their ecosystems, declaring that the act's purpose is to provide a framework that conserves the ecosystems upon which endangered species and threatened species depend and establish a program for the conservation of such species.

Conservation is defined to mean to use all of the methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provide a pursuant to the chapter are no longer necessary. That's the ultimate goal of the act is to recover a species to the point where the protection of the act are no longer necessary.

Cathy Janasie: I have here just as a note to keep in mind as we're talking about the Red Knot and the process that's happened so far in New Jersey is that any uncertainty is decided in favor of the species under the act. So, if there's a gap in the science, the agency must take action to protect the species. So, now I'm going to move through these different main sections of the act. So the first of these is the listing process and the designation of critical habitat. Just briefly I wanted to cover the definitions that are involved in this section just so we know what we're talking about as we go through the process. So, an endangered species is any species which is in danger of extinction throughout all or a significant portion of its range except for pests.

Cathy Janasie: A threatened species is any species which is likely become endangered within the foreseeable future. Then critical habitat can be areas that are either inside in or outside the current habitat for the species. These areas are supposed to have the physical or biological features that are essential to the conservation of the species and which may require a special management considerations or protection. So, section four of the act lays out how a species can be listed as either endangered or threatened under the act. A species can be listed either by the action of the agency on its own or pursuant to a public partition.

Cathy Janasie: Recently there have been mega petitions filed by conservation groups to hold the agencies to the listing deadlines mandated by the act. Most notably the 12 month finding [inaudible 00:25:45] that you can see on this chart. This is led to settlements involving hundreds of species which is one of the reasons so many listings have been happening in recent years. Just wanted you to know also that if a listing is warranted but precluded, the species goes on what is known as a candidate species list to be reevaluated in the future. So, in making listing determinations, the secretary must only consider the best scientific and commercial data available. So notably the economic impact is not to be taken into account at this stage.

Cathy Janasie: When making listing determination, the act directs a secretary to take several factors into account including whether the species habitat or range is presently or threatened to be destroyed, modified or curtailed. Or if a species is being over utilized among other factors. Before the Red Knot, the fish and wildlife service began to receive petitions to list the species starting in 2004 and the agency received additional petitions in 2005 and 2008. The Fish and Wildlife service finally determined to list the Red Knot as a threatened species pursuant to a 2011 settlement agreement between the agency and the Center for Biological Diversity.

Cathy Janasie: The listing became effective on January 12th, 2015. Now once a species is listed, the act directs either the [inaudible 00:27:14] service or NMFS to designate critical habitat which again are these areas that are essential for the conservation of the species, but it can not usually occupy their entire geographical area so [inaudible 00:27:31] critical habitat. [inaudible 00:27:36].

Stephanie Otts: All right I know we're having some audio issues. If people could chat and see if they can hear now. Yeah that's better. Sorry about this, folks.

Cathy Janasie: Sorry about that. So, I'll start by going over this slide again.

Stephanie Otts: Yeah.

Cathy Janasie: Okay. Right. So, critical habitat is designated on the basis of the best scientific data available and so as I note here, at this point in the time, the agencies can consider the economic impact of critical habitat designation while they couldn't do so under the listing process. Critical habitat provides greater protection to the species so all three critical habitat [inaudible 00:29:19] and altering habitat also must be considered in sections that [inaudible 00:29:25] consultation. Then [inaudible 00:29:29] mandates the designation of critical habitat by fish and wildlife service [inaudible 00:29:33] there are many species protected by the SA for which critical habitat hasn't been designated.

Cathy Janasie: So, the fish and wildlife service has not designated critical habitat for the Red Knot and in fact, critical habitat has not been designated for any [inaudible 00:29:46] species in New Jersey. Thus the additional protections of four different species through the designation of critical habitat is not yet available to threatened Red Knots or any other species.

Cathy Janasie: So, the next section on the act that I want to cover is section seven consultation which is the focus of the Red Knot case study and caused the most amount of controversy around the Red Knot listing. So, section seven applies to the actions of federal agencies and aims to ensure that any proposed action by the agency is not likely to jeopardize the continued existence of any [inaudible 00:30:26] species or result in the destruction or adverse modification of critical habitat. So, in essence, the provisions are meant to prevent the federal government from putting a listed species in jeopardy of extinction.

Cathy Janasie: So, once consultation is initiated, the ESA prohibits any reversal or [inaudible 00:30:48] commitment of resources with respect to agency actions. During the process, the agency proposing the action, the action agency works with the expert agency either the fish and wildlife service [inaudible 00:30:59] to determine whether its action will jeopardize the species for [inaudible 00:31:03] its habitat. So, there are some parameters for when section seven applies. Section seven only applies to federal actions which are actions [inaudible 00:31:12] funded and carried out by the federal government and [inaudible

00:31:17] consultation only applies to actions in which there is a discretionary federal involvement or control.

Cathy Janasie: Although the consultation requirement implies all listed plant and animal species and all designated critical habitat, the section only requires consultation if the federal action will jeopardize the species as a whole and not simply individual members of the species. Again, the action agency must provide the best scientific and commercial data available in order for an expert agency to have an adequate review of the effects that an action may have of current listed species or critical habitat. Just quickly, I wanted to highlight what the jeopardy prohibition requires. So, the phrase jeopardized to continue existence of a species is known as the jeopardy prohibition. It is defined in regulation to mean to engage in an action that reasonably would be expected directly or indirectly to reduce appreciably the likelihood of both the survival and recovery of a listed species and allow by reducing the reproduction numbers and distribution of that species.

Cathy Janasie: So, the potential impacts for post federal action on a listed species [inaudible 00:32:27] habitat are discussed through an administrative process known as consultation. Consultation is a two step process so it involves both an informal and formal consultation. Informal consultation is an optional process that can be used to determine whether a formal consultation is needed. If any listed species are present in the area of the proposed action and it is possible that the proposed action may adversely affect the listed species or its critical habitat, the informal consultation is required. If formal consultation is needed, the appropriate expert agency will produce a biological opinion or BiOp. The BiOp is considered if the action and stimulated effects are likely to jeopardize to continued existence of the listed species or result in the destruction or adverse [inaudible 00:33:16] critical habitat.

Cathy Janasie: If the answer to this question is yes, the expert agency must formulate reasonable and a prudent alternative that can be implemented by the infraction agency to avoid jeopardizing the species or [inaudible 00:33:30] its critical habitat. Now once expert agency issued the biological opinion the consultation process is ended. If no jeopardy is found, the project can advance. If the activity will result in some [inaudible 00:33:43] of this species, the biological opinion likely will include an incidental [inaudible 00:33:48] statement as I will discuss later and if the BiOp contains a jeopardy termination, the acting agency has three options. It can terminate the action, it can implement the reasonable and prudent alternatives or it can seek an exemption from the cabinet level endangered species committee. Committee also known as the God squad.

Cathy Janasie: Now importantly, the scope of the biological opinion is limited to the proposed [inaudible 00:34:14] action and I had to note this quite a bit while working on the Red Knot project. While there may be multiple stressors on the listed species survival, the BiOp can only address actions under the control of the permitting agency. For example, agriculture runoff is harming a listed species

habitat, but the action agency is the corps issuing a permit for an aquaculture farm only the impacts from the farm are compared in the BiOp. As the expert agent, there is no authority [inaudible 00:34:44] action for another agency not party to that BiOp.

Cathy Janasie: So, as required by the ESA, the fish and wildlife service as the expert agency developed a biological opinion for structural aquaculture operations and portions of the Delaware Bay in New Jersey where the corps which was the action agency. The consultation was treated by the issuance of permits by the corps by the state of New Jersey, first structure of aquaculture and then the [inaudible 00:35:13] area. The BiOp considered the potential impacts on the threatened Red Knot by the course permits and only the permits for the reasons I discussed above. So, the Red Knot BiOp is programmatic meaning that this initial BiOp looks at the overall course program for certain ADZ areas in Delaware Bay and then the fish and wildlife service and the corps will engage in streamline consultations as individual permits for farmers are needed under the program.

Cathy Janasie: The BiOp found that the corps permits would not result in jeopardy to the bird. The BiOp split the actionary into portions. So, the southern segment already has established aquaculture operations and better physical attributes to host aquaculture. Thus the BiOp dictates that in this area aquaculture will be [inaudible 00:35:57] facilitated and expanded, recognizing that there will be localized adverse affects to the Red Knots. The northern segment has more concentrated Red Knot use and low aquaculture use. Thus the BiOp prioritizes Red Knot conservation recovery in this portion of the actionary in part to compensate for the farms in the southern segment. The BiOp does require certain actions that [inaudible 00:36:21] farmers must take known as conservation measures to reduce the potential harm of farming of the Red Knot population.

Cathy Janasie: The BiOp says that these measures are non discretionary actions that aim to benefit or promote the recovery of the Red Knot and are integral part of the proposed action and serve to minimize or compensate for project effects. Among other things, the conservation measures linear placement to reduce the impact on horseshoe crabs and as well as farm [inaudible 00:36:54] to the farms to help reduce the impact on Red Knot behavior. These conservation members have all the results in and then [inaudible 00:37:01] at at least one farm site, potentially impacting others.

Cathy Janasie: So, finally the conservation measures provide [inaudible 00:37:10] management process that I will discuss in a few minutes, but the BiOp [inaudible 00:37:19] conservation groups. The industry is really concerned that these measures are not necessarily going to protect the birds and [inaudible 00:37:28] interactions are minimal as the farms occur along less than a mile of the roughly 100 mile Delaware Bay shoreline that Red Knots frequent. For the buffers around the farms are in place to enhance Red Knot protection. On the other hand, Red Knot

scientists and non governmental organizations are concerned that the measures in the BiOp are not enough to help protect the birds. So, some of these organizations have even petitioned the state and federal agencies to stop aquaculture growth [inaudible 00:37:58] existing activities further out concerned that the farm gear and activities may disturb Red Knots along lower bay beaches during their annual spring migration.

Cathy Janasie: So, finally quickly I just want to go over [inaudible 00:38:12] provision, what it means to actually take a listed species under the act. So, while endangered species are covered by the Take Prohibition, threatened species are not. The fish and wildlife service has adopted a blanket rule that extends ESA take prohibition to all threatened species unless the agency adopts the species specific rule removing all or part of that blanket take prohibition. NMFS does this on a case by case basis. Since the Red Knot is a terrestrial species, through that fish and wildlife service rule, the Take Prohibition applies to the threatened Red Knot.

Cathy Janasie: Now the Take Prohibition applies to any person subject to the jurisdiction in the United States including differences in governmental units. With Take finally we are concerned with individual members of the species. So, just an effect on one red knot can equal a take under the act and just note that Take only applies to wildlife and not to plant species. So, the ESA defines Take mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or an attempt to engage in any such conduct both lethal and non-lethal actions can constitute a take under the statute. The agency had defined both what harass and harm mean through regulatory action to include activities that interrupt a creature's essential life functions like breeding, feeding or sheltering.

Cathy Janasie: To harass means an intentional negligent act or omission creating a likelihood of injury to wildlife to such an extent that it's disrupting mortal behavioral patterns including breeding, feeding or sheltering while harm is an act that actually kills or injures wildlife. That can actually include significant habitat modification or degradation if a killing or injuring the wildlife by comparing those essential behavior patterns. Therefore, Take includes many more actions than actually killing an individual member of a listed species so harm and harass both protect against interference with the species and essential function including feeding. So, if an oyster farm is affecting a Red Knot's feeding behavior, this can be considered a non-lethal Take under the act.

Cathy Janasie: So, under the ESA, there can be what are known as incidental takings. So, an incidental take is any taking otherwise prohibited and such taking is incidental to and not the purpose of the carrying out of an otherwise lawful activity. In other words, when illegal activity has the unintended consequences of harming a listed species, it is described as an incidental take. Thus [inaudible 00:41:03] to opinion, the agency can create [inaudible 00:41:06] statement which allows a certain amount of Take for the activity at a level that will not jeopardize the species.

Cathy Janasie: So, the Red Knot BiOp continues to [inaudible 00:41:17] statement that allows the structural aquaculture industry to impact the Red Knots up to a certain allowable extent. Certain activities that would otherwise make the aquaculture industry liable for Takes under section nine are allowed under this incidental Take statement. So, the ITS distinguishes between lethal and non-lethal Take. Allowing 315 lethal takes from the harassment or harm of Red Knots over the 10 year life of the BiOps. In comparison, the BiOp does allocate non-lethal Takes among certain farms in particular, allocating 644 non-lethal takes to one farm and 641 to another. The aquaculture community has expressed some concern over how these Takes will be [inaudible 00:42:04]. In particular because for actions that are not covered by the incidental Take statement, the farmers could be liable for a Take even if the Take was incidental to the day to day operations of the farm.

Cathy Janasie: This means the farmers could be liable for [inaudible 00:42:18] ESA and civil penalties range anywhere from \$500 to \$25,000 while criminal penalties can be up to \$50,000 or a year in prison. However, depending on the nature of the violation, the actual penalty of the case could be significantly less. Because the government has significant and proportionate discussion setting these penalties. So, just to wrap up, I just wanted to touch on this adaptive management process that has been going on since the BiOp was finalized back in 2015. So, the adaptive management process was provided for under the Red Knot BiOp. It's been implemented by an agency working group which then create a stakeholder committee which includes members from the aquaculture community and the Red Knot community and it holds joint meetings of both groups that [inaudible 00:43:11] and this process allows the conservation measures to be adjusted based on new data or review of existing data, but it's not mandatory to teach the conservation members.

Cathy Janasie: Measures, this is a discretionary process. So, it's not that if new data comes out they have to be changed. But the conservation measures can be adjusted, the changes still reduce the adverse affects to the Red Knots, benefit the aquaculture industry without increasing adverse affects to Red Knots or both. So, looking forward, research continues to be done on the affects of aquaculture on Red Knots. Especially in regards to this adaptive management process. So, for example, the effects of oyster racks on the ability of horseshoe crabs to come ashore and lay eggs is the basis of continuing study and there have been conservation and measured changes during this adaptive management process. Some recent changes include allowing vehicle use, [inaudible 00:44:12] increasing boat access and then allow [inaudible 00:44:17] type requirement.

Cathy Janasie: So, with that, I'll wrap up and get to questions or comments [inaudible 00:44:30] presentation.

Stephanie Otts: Great. So, thanks Amanda and Cathy for the presentations. We'll just give folks a minute or two to see if there's questions. You may use the chat function to ask

of the speakers if they have questions. While you're thinking about your questions if you have any, we just wanted to do a quick promo for the upcoming webinars in this series. These will all be on Wednesdays from 2:00 to 3:00 PM Eastern time. So, the next one is July 31st which will be a presentation with focus on Evolving Regulatory Structure for shellfish aquaculture. The first part of the presentation will be on the key study in Georgia and their new legislation that was just recently passed, but it will also become information about new legislation in other states as well.

Stephanie Otts: Then we have three in August relating to operational limitations on August 14th. By this, we mean these are things that may come up after the application has received their license and their permit. So, these are things that are coming up when they're actually doing the aquaculture activities themselves. Then on August 21st, the case study about certification of shellfish growing waters in the EEZ and then wrap up on August 28th with permitting and use conflicts with a case study out of Virginia. So, it looks like we don't have any questions coming in and so I did note that in the chat box, that we have recorded a webinar and we will be posting it on our website for this week. So, if you have anybody that didn't get a chance to join us or if you joined a little late, we'll be making it available.

Stephanie Otts: So, once again thank you so much for joining us today and feel free to reach out to myself or any of our presenters by email if you have questions. Thank you.