**Minutes of the Advisory Committee on Plants and Animals**

**April 17, 2019 Meeting**

1. CALL TO ORDER

 The meeting of the Advisory Committee on Plants and Animals was called

to order by Advisory Committee Chairperson Dr. Kevin Hoffman on Wednesday,

April 17, 2019 at 1:43 P.M. at the Plant Quarantine Branch Conference Room,

1849 Auiki Street, Honolulu, Hawaii 96819.

Members Present:

Dr. Kevin M. Hoffman, Committee Chairperson, Hawaii Department of Agriculture (HDOA)

Kenneth Matsui, Petland/Pets Pacifica

Dr. Bruce Anderson, Director, Department of Health, Ex Officio Member

Kenneth Redman, Retired Director of the Honolulu Zoo

Dr. Maria Haws, Director, Pacific Aquaculture & Coastal Research Center, University of Hawaii at Hilo

Dr. Ryan Okano, Division of Aquatic Resources, Department of Land & Natural Resources (DLNR), Ex Officio Member Designated Representative

Members Absent:

Scott Glenn, Director, Office of Environmental Quality Control, Ex Officio Member

Dr. Benton Pang, Invasive Species Team Manager, U.S. Fish & Wildlife Service

Others Present:

Jennifer Waihee-Polk, Deputy Attorney General

Jonathan Ho, Acting Manager, Plant Quarantine Branch (PQB), HDOA

Trenton Yasui, Acting Inspection & Compliance Chief, PQB, HDOA

Techie Lancaster, Acting Invertebrate & Aquatic Biota Specialist, PQB, HDOA

David Lingenfelser, Acting Land & Vertebrate Specialist, PQB, HDOA

Karen Hiroshige, Secretary, PQB, HDOA

Leo Obaldo, Economic Development Specialist, Aquaculture Livestock Support Services (ALSS), HDOA

Liz Xu, Economic Development Specialist, ALSS, HDOA

Justin Goggins, Acting Aquatic Invasive Species Coordinator, Division of Aquatic Resources, DLNR

David Penn, Penn Law Center

Dr. Andre P. Seale, University of Hawaii at Manoa

Donald Heacock, Kauai Organic AgroecoSystems

1. INTRODUCTION AND COMMENTS

Chairperson Kevin Hoffman and the Advisory Committee members introduced themselves.

1. APPROVAL OF MINUTES FROM THE MARCH 6, 2019 MEETING

Chairperson Hoffman asked the Committee to review the minutes for the

March 6, 2019 meeting before entertaining a motion to approve them.

Chairperson Hoffman inquired regarding the need for discussion. With no further questions or comments, Committee member Ken Redman made a motion to approve the minutes of the March 6, 2019 meeting. The motion to approve was seconded by Advisory Committee member Bruce Anderson and was passed unanimously.

Vote: APPROVED 6/0.

1. COMMENTS FROM GENERAL PUBLIC ON AGENDA ITEMS (ORAL OR

WRITTEN)

Chairperson Hoffman asked if there were any comments from the general public on any of the agenda items. There were no comments from the general public.

Chairperson Hoffman moved to change the request agenda to review the Land Vertebrate Requests (1) and (2) first, due to the applicant’s travel time constraints, followed by the Invertebrate and Aquatic Biota request. Maria Haws seconded the motion. Chairperson Hoffman called to vote.

Vote: APPROVED 6/0.

 Motion passes.

1. REQUESTS TO BE REVIEWED BY THE ADVISORY COMMITTEE

Land Vertebrate:

1. Request for: Approval of the Board of Agriculture's Proposed Order Amending Chapter 4-71, Hawaii Administrative Rules (HAR), "Non-Domestic Animal Import Rules," to Transfer the Water Buffalo, *Bubalus bubalis,* From the List of Restricted Animals (Part A), to the List of Restricted Animals (Part B). (See Attachment A)

PQB Acting Manager Jonathan Ho provided a synopsis of the request.

Advisory Committee member Dr. Bruce Anderson asked for clarification regarding the List of Restricted Animals, Part A (RA List), and the list of Restricted Animals, Part B (RB List). Mr. Ho said the RA List allows for the import of those animals for research in a University or exhibition in a municipal zoo, which would preclude Mr. Heacock from importing the water buffalo. He said the RB List allows for importation for commercial use, such as what Mr. Heacock is proposing.

Advisory Committee member Mr. Ken Redman said that farming is not listed as a commercial use in HAR 4-71, stating the rules only mention research, zoological parks or aquaculture production. Mr. Ho said that the HAR lists specific types of activities include private and commercial use, but these listed activities are not exclusive and that based on Mr. Heacock’s proposal, he is using the water buffalo for a commercial use.

Mr. Redman said that the last time water buffalo came before the Committee, the recommendation was made to consider it as a domestic animal. He asked why it is now being proposed for placement on the RB List. Mr. Ho said that the Board made that determination at their last meeting due to the fact that Mr. Heacock would like to import the animals prior to the start of summer. He said that if the request had moved forward as Mr. Heacock had originally petitioned, there would be no way to make achieve the results in the required timeframe.

Advisory Committee Member Kenneth Matsui said that if other farmers want to raise the water buffalo for milk such as with the proposed co-op, would those farmers have to meet the same requirements as Mr. Heacock. Mr. Ho said “yes”, that proposed conditions do allow for the transfer of the animals, and that he would further discuss the conditions in the upcoming submittal. Mr. Ho said that Mr. Heacock would be importing only a limited number of animals and was unsure as to how long it would take to get enough animals before they would be distributed. He said that it is possible that the water buffalo could be a domestic animal by that time and there may be no permitting needed by PQB.

Hearing no further discussion, Dr. Anderson made a motion that the Board approve their proposed order amending Chapter 4-71, HAR to transfer the water buffalo, *Bubalus bubalis*, from the RA List, to the RB List. Mr. Matsui seconded the motion.

Vote: APPROVED 6/0.

 Motion passes.

1. Request to: If the Board of Agriculture Orders the Transfer of the Water Buffalo, *Bubalus bubalis*, From the List of Restricted Animals (Part A), to the List of Restricted Animals (Part B), and Subject to the Order First Taking Effect: (1) Allow the Importation of Water Buffalo, *Bubalus bubalis*, an Animal on the List of Restricted Animals (Part B), by Permit, for Commercial Production, by Kauai Organic AgroecoSystems; and (2) Establish Permit Conditions for the Importation of Water Buffalo, *Bubalus bubalis*, an Animal on the List of Restricted Animals (Part 8), by Permit, for Commercial Production, by Kauai Organic AgroecoSystems.

PQB Acting Manager Jonathan Ho provided a synopsis of the request.

Advisory Committee Chairperson Dr. Kevin Hoffman asked if there were any differences in the conditions from the prior water buffalo submittal in February. Mr. Ho said this is the first time the conditions have been presented for review because the original submittal was to consider water buffalo as a domestic animal and did not require permit conditions. Mr. Ho said that these conditions are based off of standard conditions in other permits with a mix of specific ones, such as the fencing requirements, that are used for Buffalo, *Bison bison.*

Advisory Committee member Dr. Bruce Anderson asked for clarification regarding how condition 8 would be enforced. Mr. Ho said that condition 8 refers to the World Organization for Animal Health (OIE), which is an internationally recognized organization that maintains a list of diseases that affect animals. He said that based on the organism and the diseases that affected it, it would then determine which part of the condition that would be followed. Mr. Ho said inspections would be conducted by PQB at the port of entry and that veterinarians would be conducting the disease certifications. Dr. Anderson asked if the quarantine would be at Mr. Heacock’s facility. Mr. Ho said based on the recommendations of the Animal Industry Division (AID), the quarantine would be and that the quarantine period would be 60-90 days after importation.

Advisory Committee member Ken Redman asked if the quarantine was 90 days. Mr. Ho said that AID veterinarians have some discretion. Dr. Anderson asked if a veterinarian would be releasing the animals from quarantine. Mr. Ho said “yes.” Dr. Anderson commented that it would equate to an additional layer of inspection should an animal develop a disease while in quarantine. Mr. Ho said “correct” and that the conditions also allow for PQB to conduct post entry inspections to ensure that containment and other conditions of the permit are being met. Advisory Committee member Dr. Ryan Okano asked how often PQB conducts those kinds of inspections. Mr. Ho said that PQB conducts them based on risk and that PQB aims to conduct them annually.

Mr. David Penn, Penn Law Center, said that he is assisting Mr. Heacock; that he works for the Department of Land and Natural Resources (DLNR); explained how he knew Dr. Okano, Dr. Anderson, and Advisory Committee member Dr. Maria Haws, and also described some of his prior work experience. He said that he had concerns regarding the OIE disease requirements in condition 8 and that the specific diseases should be specified in the conditions. He said that if there were none, that the condition should be removed.

Mr. Penn questioned the Board of Agriculture’s (Board) ability to designate diseases and was worried that the Board could designate another disease for testing. He said that they were looking for as much certainty as possible due to the amount of time invested and cost.

Mr. Penn commented on the fencing requirements saying that PQB would likely approve the use of electric fences but was concerned that there was still some discretion in the approval. He said that the animals are coming from an area that used electric fences for containment, so the animals are already trained on electric fences. He said that the intent is to get as much certainty as possible up front and avoid potential hiccups for in the inspections.

Mr. Penn noted that there were two different number 12 conditions.

Mr. Penn asked that the costs for inspection be clarified in the conditions so that the fees are clearly stated. Dr. Hoffman asked for clarification on the specific costs Mr. Penn was looking for. Mr. Penn said he was looking for the cost of the veterinary inspections and what diseases they would cover. Dr. Hoffman asked if there would be any PQB fees for inspection. Mr. Ho said that if the inspection was conducted at the port of entry during normal business hours, there would be no costs. Dr. Hoffman asked about the site inspection. Mr. Ho said it would be $50.00. Mr. Penn asked how much it would cost for the veterinarian inspection. Mr. Ho said that he would need to inquire with the AID on those costs.

Advisory Committee member Kenneth Matsui said that there were questions about what diseases would be certified. Mr. Ho said that he would address some of the concerns brought up. Mr. Ho said that condition number 8 is written this way because of how permit conditions are established. He said that if there were no OIE diseases today and the conditions did not list a requirement for disease certification, should a disease be listed, to include that disease into the conditions would require the entire review process to occur. Mr. Ho said that the intent was to “future-proof” the conditions because once established, the PQB can administratively issue permits for the same organism, for essentially the same use.

Mr. Ho said that the Board can require testing for diseases and assumed that the diseases that were listed by Dr. Maeda were those designated by the Board, but would determine if those were the only ones.

Mr. Ho said that with regard to the fencing requirements, the condition was drafted to enable the permittee to use specific types of fencing besides an electrical fence and it was drafted in a way to provide some specificity, while maintaining the discretion to approve alternative containment methods.

Mr. Ho said that fees are either in rule or statue. He said if the fees were to be included in the permit and then the statute or rule were to subsequently change, it would create inconsistency and potentially a legal problem. Mr. Penn said that the explanation was helpful and asked if the fee schedules and/or rules/statutes be provided to him. Mr. Ho said that he could provide them.

Dr. Anderson said that he felt that a list would be appropriate. He said that the diseases listed by AID are definitely of concern and explained that leptospirosis is a disease that should also be of concern. He said he was unsure of it being an OIE listed disease and asked how it could be tested for should an animal be imported. Mr. Ho said that the Board has the authority to impose permit conditions regarding health requirements and that the Committee can make recommendations to amend permit conditions to address issues that may have been missed during prior portions of the review process. Mr. Ho said once those recommendations have been made, they can be included in the permit conditions and presented to the Board for final approval. Dr. Anderson said that he would like to include leptospirosis in the conditions as it would be easy to test for.

Mr. Matsui said he understood the OIE rules only apply to diseases that did not already occur in the area of destination and that requiring a test for a disease that already occurs in the State would be burdensome. Dr. Anderson said that he has done a lot of work on leptospirosis, that there are 22 strains, and that the Committee should try to prevent additional strains from being introduced into the State. Mr. Ho said that Ohia rust is a similar situation because the strain in Hawaii is very virulent on Rose Apple, but generally mild on Ohia however, there are other strains that are extremely virulent to Ohia. Mr. Matsui said he was thankful for the clarification.

Mr. Penn asked for clarification on what the Committee would be recommending to the Board. Mr. Ho said that the Committee would be making a recommendation to the Board to approve the conditions as presented, or the Committee could make changes to the conditions and recommend those to the Board. Mr. Ho used the inclusion of leptospirosis testing as a potential amendment that the Committee could recommend the Board adopt. Mr. Penn asked if there would be additional opportunity to comment at the Board meeting. Mr. Ho said yes.

Mr. Penn said that he felt that the expertise of the Advisory Subcommittee Members should be explained in the submittals. He said that he was not familiar with Dr. Carolyn Mckinnie. Dr. Hoffman asked Mr. Ho if there was a list of the Subcommittee members and could their affiliations be included next to their names. Mr. Ho said yes it could be done. Mr. Ho said that Dr. Mckinnie is a supervisory veterinarian for the U.S. Department of Agriculture – Animal Care western region and explained the process of how the subcommittee members are included.

Mr. Redman said that there are subcommittee members who often do not respond. He said he recognizes that the PQB staff do their best to elicit responses but felt that there should be a recourse to address those members who chronically do not respond, such as getting a new subcommittee member. Dr. Hoffman said that the response rate of the subcommittee members could be evaluated to make that determination. Mr. Redman said that he relies heavily on their recommendations.

Mr. Donald Heacock, the applicant, said that he used to work under Dr. Anderson and that he recognizes the disease concerns. He said because of the potential for diseases, he is going to source his animals from an area that is disease free, citing a letter from veterinarian Shane Morgan (see Attachment 7). Mr. Heacock said that AID administrative rules list the diseases that affect cattle and that water buffalo do not get most of the diseases that cattle do, referencing that there has not been a single known case of mad cow disease in water buffalo worldwide.

Mr. Heacock said that the quarantine requirements of condition 8 refer to direct or indirect contact with other organisms. He said that it could not be achieved because there are microorganisms everywhere, but that the intent was likely referring to bovines to prevent disease transmission.

Mr. Heacock said there are 2 types of electric fences, pain and strength. Mr. Heacock said he is using the best electric fence based off of recommendations from the American Water Buffalo Society and Mr. Ferrera from Kaupo Ranch. He said that Water Buffalo are extremely smart and that once they feel the shock, will not go near the fence again. Mr. Matsui asked if Mr. Heacock was using a pain-based fence. Mr. Heacock said yes.

Mr. Matsui asked Mr. Heacock what language he would suggest for the OIE condition. Mr. Heacock said “other Bovidae.” Mr. Matsui asked how Mr. Heacock intends to create a herd if he is only importing females. Mr. Heacock said that they would be pregnant.

Mr. Heacock said that the permit conditions should not apply to the progeny, particularly for diseases. Dr. Hoffman said that there could be risk of a mother passing a disease to a calf. Mr. Heacock said that he is getting the animals from a closed herd that is tested disease free to prevent that. Mr. Matsui commented that he disagreed with disease free designations because a negative test does not necessarily mean that the disease is not there, just that it may not have been detected yet. Mr. Heacock said that was true, but the risk was still very low.

Mr. Matsui said that water buffalo are not conditionally approved, so what concern was there regarding the progeny as they cannot be freely distributed. Mr. Heacock said that he was concerned about the testing of diseases because if the parents are disease free, the progeny would be too. Advisory Committee member Dr. Maria Haws said that only specific conditions referred to progeny and that if the condition did not refer to progeny then it would not apply. Mr. Ho said that the administrative rules regulate importation and possession and the permits are good for the life of the organism and progeny. He said the use of progeny was very specific to each condition and the requirements for that condition. Dr. Haws asked for clarification that the omission of progeny was intentional. Mr. Ho said that when the condition is referring to importation, there will only be no progeny included; but when condition refers to reporting or containment, the progeny are included.

Dr. Anderson asked Mr. Heacock if he was comfortable with the disease testing requirements now that there has been discussion about them. Mr. Heacock said yes and that his former concern was that he’d have to be constantly testing the animals. Dr. Anderson asked Mr. Heacock if he was comfortable with the containment requirements. Mr. Heacock said that he was. Dr. Anderson noted that there are cattle and donkeys as examples of domesticated animals that became feral. Mr. Heacock said that it was a legitimate concern, but the value of the water buffalo milk is very expensive and if an animal did escape for whatever reason, he would get them back.

Dr. Hoffman asked Mr. Ho to recap the proposed changes to the conditions. Mr. Ho said that there would be a change made to the quarantine requirements in condition 8 to specify animals that could get diseases from water buffalo, that leptospirosis would be included into condition 9 per Dr. Anderson’s recommendation, and the numbering of the conditions would be corrected. Dr. Hoffman asked if the fees needed to be included in the conditions. Mr. Ho said that he could provide them to Mr. Heacock. Dr. Hoffman asked if the changes would be made before the Board meeting. Mr. Ho said that they would be done and that there would be a notation made to show the changes were made based on the Committee’s discussion.

Hearing no further discussion, Dr. Anderson made a recommendation to approve the request with the inclusion of the comments made by Mr. Ho. The motion was seconded by Mr. Redman.

Vote: APPROVED 6/0.

 Motion passes.

(Recess taken at 2:48 P.M.)

(Meeting reconvened at 2:57 P.M.)

Chairperson Hoffman called the meeting back to order at 2:57 P.M.

Invertebrate and Aquatic Biota:

1. Request to: (1) Allow the Importation of Nile Tilapia, *Oreochromis*

 *niloticus*, a Fish on the List of Restricted Animals (Part B), by Permit, for

 Aquaculture Production, by Kohala Mountain Fish Company, LLC; and (2)

 Establish Permit Conditions for the Importation of Nile Tilapia,

 *Oreochromis niloticus*, a Fish on the List of Restricted Animals (Part B),

 by Permit, for Aquaculture Production, by Kohala Mountain Fish

 Company, LLC.

Acting Invertebrate and Aquatic Biota Specialist Techie Lancaster provided a synopsis of the request.

Advisory Committee Chairperson Dr. Kevin Hoffman asked for any testimony from the public.

 Mr. Justin Goggins, Acting Aquatic Invasive Species Coordinator for the Department of Land and Natural Resources (DLNR), Division of Aquatic Resources (DAR), provided testimony on behalf of DAR in opposition to the request to import Nile tilapia for aquaculture. Mr. Goggins stated that former DAR administrator, Dr. Bruce Anderson, and current DAR administrator, Mr. Brian Neilson, provided both written and oral testimony in opposition to the Hawaii Department of Agriculture rule amendment which moved Nile tilapia from the List of Restricted Animals (Part A) to the List of Restricted Animals (Part B). He stated that DAR’s policy is to discourage the culture of non-native species that are regulated by the State of Hawaii, such as the Nile tilapia, *Oreochromis niloticus*. Mr. Goggins said that many of the traits that make this species desirable for aquaculture such as: fast growth; adaptability and tolerance to a wide range of environmental conditions such as salinity and temperature; high fecundity; and a diverse diet, make it a high risk for invasiveness.

Mr. Goggins said that DAR conducted a thorough risk assessment based on scientific literature utilizing three risk assessment tools: the Hawaii Marine Invasive Species Risk Assessment (MIRA) Tool, the Fish Invasive Scoring Kit (FISK), and the Canadian Marine Invasive Screening Tool (CMIST). He said that two of the three tools used resulted in a high risk for invasion score, and the third tool resulted in a moderate to high risk for invasion. Mr. Goggins said that DAR opposes the import of Nile tilapia for aquaculture due to the potential invasive risk it presents to Hawaii’s waters, economy, and aquatic resources which may include Hawaii’s native and endemic species, and because it is counter-productive to the goals set by the Hawaii Inter-Agency Biosecurity Plan, the Hawaii Invasive Species Management Plan, and the DAR Aquatic Invasive Species Strategic Plan. He said that DAR and its partners, the National Oceanographic and Atmospheric Administration and the Bishop Museum, have opposed the importation of Nile tilapia for aquaculture since 1995, and that testimony in opposition to the import of Nile tilapia has been submitted by experts such as Dr. Dan Polhemus, Dr. Lou Eldredge of the Bishop Museum, and Dr. Bruce Mundy of the National Marine Fisheries Service. Mr. Goggins state that if Nile tilapia is allowed into the State it is only a matter of time before it is introduced into natural waterways, that the cost of management could grow exponentially, and that eradication may not be feasible due to the high cost. He stated that DAR recognizes and appreciates that the applicant has good biosecurity measures in place, however DAR recommends that the aquaculture industry as a whole look to utilize species that present a lower risk to Hawaii’s native ecosystems.

Advisory Committee member Dr. Bruce Anderson referred to the applicant’s statement that there are Nile-hybrid tilapia and other species of tilapia in Hawaii, and asked Mr. Goggins to explain how the introduction of imported Nile tilapia into natural waterways would increase the risk to the environment. Mr. Goggins said that the applicant stated that Nile tilapia grows twice as fast as other tilapia species in Hawaii, it has a history of invasion in many tropical environments, feeds on and out-competes a lot of native species, and it could hybridize with other species of tilapia already in natural waterways.

Advisory Committee member Dr. Maria Haws said that DAR prefers that industry utilize native species for aquaculture and asked what species DAR would recommend that industry use, given that native fisheries are declining, and that aquaculture is recognized as a major contributor to world and local food security. Advisory Committee member Dr. Ryan Okano suggested that the aquaculture industry consider using species that were used in Hawaiian fishponds in the past and also in the present, such as the amaama, the awa, and the aholehole; however he recognizes that the growth rate of these species is not as high as the Nile tilapia. Advisory Committee member Anderson said that moi and Pacific Threadfin were cultured during his time at Oceanic Institute and that Nile tilapia was never considered for culture. He added that while Indonesia is currently culturing milkfish and is considering a wide variety of species for aquaculture, no one there has ever suggested growing Nile tilapia in Hawaii. Committee member Anderson said that there are a lot of other local species or native fish that are well suited to Hawaii’s climate and environment and have proven to be successful aquaculture species throughout the world.

Advisory Committee member Haws said that while she believes that Hawaiian fishponds can play a much larger role in food production and food security in Hawaii, the native species that we would like to culture in Hawaii, are very difficult to produce in hatcheries, and there isn’t much information on feed requirements for these species. She said that while the culture of native species is a good long-term goal, Hawaii imports a considerable amount of tilapia and other freshwater fish for food, and there is an urgent need for more local food production and to reduce our carbon footprint. Advisory Committee member Haws said that there is pretty good evidence from the most recent tilapia surveys conducted by the University of Hawaii, College of Tropical Agriculture, that indicate that there are at least six or seven species of tilapia found in Hawaii that have hybridized. She said that the research by Dr. Andre Seale shows that Nile tilapia is the least salinity tolerant species and would therefore present the least risk to Hawaii’s brackish water and marine areas. Advisory Committee member Haws said that industry is currently cultivating hybrids that are potentially invasive, and that she would rather see these hybrids replaced by non-breeding strains of tilapia that are not tolerant of saltwater and/or brackish water.

Advisory Committee member Okano said that there are many native species that are natural resources and are consumed consistently and relied on as food by communities on the neighbor islands, and that he believes that Oahu communities do not rely on these same native species because they no longer exist on Oahu. He said that the absence or low populations of some of these species on Oahu has to be attributed to the introduction of invasive species, such as tilapia, in Oahu’s waterways.

Advisory Committee member Haws said that she had some experience with DAR’s use of their invasive species risk assessment tools, and that she was very impressed with the amount of work that went into information collection and literature review for DAR’s assessment. Advisory Committee member Haws said in her experience, she felt that the tools may have been used inappropriately to do the assessment because DAR cut and pasted certain sections from different studies into the assessment tools that were deemed relevant, and the information was therefore taken out of context and did not apply to Hawaii. She said in order to obtain an accurate assessment, DAR should get out and do the observation and studies that are required. Advisory Committee member Haws said that if Nile tilapia were not established in Hawaii, she would recommend that the Advisory Committee exercise more caution and take a closer look at the risk of invasiveness. She said that because Nile tilapia is in so many of Hawaii’s watersheds, and because Hawaii has a need for more food production with no alternatives to tilapia, the pros of allowing importation of Nile tilapia outweigh the cons, and she does not see how this request would be harmful.

Mr. Goggins said that he believes that something harmful done in the past is not an excuse for doing that same harm today and tomorrow. In reference to the risk assessment tools, Mr. Goggins said that while it would be ideal to go out into the environment and do observations and studies for all potential aquaculture species, it would not be possible to complete that type of assessment in a reasonable amount of time, given the constraints that DAR has with regards to staffing and funding. He said that the risk assessment tools that DAR uses are the best assessment tools that DAR currently has available to them and it provides DAR with information that is quantifiable and objective. Mr. Goggins said that DAR cannot support the import of a species that is known to be invasive worldwide and supporting it would contradict DAR’s mission and the Governor’s stance on biosecurity.

Advisory Committee member Anderson said that tilapia are known invasive species in Hawaii because it is found in estuaries and fishponds, and the applicant is seeking to import a species of tilapia that grow faster and bigger than any other tilapia species that we know of. He said that if this species were to get into the environment and hybridize with existing tilapia species, it may result in a super invasive species. Advisory Committee member Anderson said that the existing problems in Hawaii with invasive tilapia may be exacerbated if this request is approved, and that he cannot think of one species that has been imported into Hawaii for aquaculture that has not made its way into the wild. He said that the likelihood of Nile tilapia being contained once large numbers of this species is imported is very small, and that he can envision a day when Nile tilapia ends up in aquaponics facilities around the State. Advisory Committee member Anderson said that industry has a viable alternative which is to grow the tilapia species that can already be found in the State. He said that the risk is significant, and that the benefit from increasing biomass for consumption is relatively small.

Advisory Committee member Okano said that while the risk assessment is not perfect, the burden of proof goes both ways, and that the applicant has not provided any scientific evidence that the importation of Nile tilapia presents minimal risk to Hawaii’s environment.

Acting Inspection and Compliance Section Chief Mr. Trenton Yasui informed the Advisory Committee that the applicant, Mr. John Oliva, was available by phone to answer any of the questions or concerns that the Advisory Committee had. Advisory Committee Chairperson Hoffman asked that the applicant be called, and Acting Specialist Lancaster subsequently called Mr. Oliva.

Advisory Committee member Haws said that she did not believe that it is accurate to say that if Nile tilapia were to get into the environment that it would retain the same traits, i.e. faster growth and larger size, because when you hybridize two super performing animal lines, sometimes you get a little bit of hybrid vigor, but often times you see the degeneration of the desirable performance traits that are maintained in a pure tilapia, which is why many of the farmers want to grow pure Nile tilapia rather than the local hybrid tilapia.

Advisory Committee member, Mr. Kenneth Matsui, stated that the reason why the Ala wai canal is filled with tilapia is because native species were killed off by our pollution, and the tilapia are able to survive in those poor conditions.

The applicant, Mr. John Oliva, introduced himself as the general manager for the Kohala Mountain Fish Company (KMFC).

Advisory Committee member Anderson said that Mr. Goggins from DAR testified that the risk assessments that were run for Nile tilapia resulted in a finding of high or moderate to high risk for invasion, and asked Mr. Goggins to summarize his testimony for Mr. Oliva so that he could respond. Mr. Goggins summarized his previous testimony for Mr. Oliva. Advisory Committee member Anderson asked Mr. Oliva why he chose to request to import Nile tilapia when there are hybrids already in Hawaii that can be used for aquaculture. During Advisory Committee member Anderson’s question, the call with Mr. Oliva was dropped.

Advisory Committee member Haws asked Mr. Goggins if there are tilapia established in the watershed where the applicant’s facility is located, and Mr. Goggins replied that he did not know.

Private citizen and former DAR Aquatic Biologist on Kauai, Mr. Donald Heacock, testified that he has reared *Oreochromis aureus* since the early 90’s, and that he helped develop the Hawaii Stream Bio-Assessment Protocol. He said that Nile tilapia does grow quickly, however they do not reproduce until they are fairly big, whereas *Oreochromis mossambicus* starts to reproduce at 7 cm. Mr. Heacock said that *O. mossambicus* does not have gill rakers to filter out phytoplankton, while *O. aureus* and *O. niloticus* do. Mr. Heacock said that the stream on his farm has small mouth bass, Clarias catfish, *O. mossambicus* and Koi, and none has escaped to his knowledge. He said that he agrees with Advisory Committee member Anderson’s statement that these animals will escape, and that the tilapia species with the highest risk assessment is *O. mossambicus*. Mr. Heacock said that he gets mobbed when he sells his tilapia at the farmer’s market, but that he has mixed feelings on this issue, and suggested that a condition be included that only allows the sale of dead fish on ice.

There was some confusion among the Advisory Committee members whether the proposed permit conditions prohibited live sale, however Acting PQB Manager, Mr. Jonathan Ho, later clarified that the proposed permit conditions do not prohibit the live sale of tilapia, but that the conditions could be changed. Acting PQB Manager Ho asked if there were changes that could be made to the proposed permit conditions to minimize risk in the Advisory Committee’s eyes. He said that disallowing live transfer and amending the proposed permit condition whereby permits cannot be issued administratively and may only be issued on a case-by-case basis, are examples of changes that may minimize risk. He said that by going this route, there could be site, procedural, and/or importer specific requirements established, as opposed to the more generalized conditions that have been proposed.

Advisory Committee member Anderson reiterated his previous point, that based on the risk assessments conducted, DAR believes that Nile tilapia presents a moderate to high risk for invasion, that there are already hybrid tilapia species available in Hawaii for local aquaculture. He added that species that are introduced for aquaculture eventually get out and become established in the waterways, and that based upon Hawaii’s history, he doesn’t see that changing. Advisory Committee member Anderson said that while there may be a possible benefit for importing Nile tilapia which grows faster and bigger that can be sold, the flipside is that the inevitable introduction of Nile tilapia into the environment may result in the development of a hybrid tilapia that may increase the risk to the environment. He subsequently asked Mr. Oliva why he wants to import Nile tilapia.

Mr. Oliva said that KMFC would like to import Nile tilapia for three reasons: rate of growth, resistance to disease, and fillet yield. He said that their operation is designed to process fillets, and that the body shape of *O. mossambicus* that they currently culture, is not conducive to maximizing yields. Mr. Oliva said that the ability to shave off a month or two from production time makes a big difference in the bottom line.

Advisory Committee member Anderson said that because Nile tilapia is highly desirable, if it were to end up in the aquaponics industry, it will end up being distributed everywhere. He noted that once the backyard growers stop using their systems, many fish will either end up in streams, be carelessly disposed of or given away, and that would create a huge risk of introduction into native ecosystems. Acting PQB Manager Ho clarified that the ability to transfer was included in the proposed permit conditions, in response to the applicant’s request to eventually establish a Nile tilapia cooperative.

Advisory Committee Chairperson Hoffman said that there appear to be two differing viewpoints on the importation and suggested that the conditions be reviewed individually to see if risk could be further reduced. Advisory Committee member Haws said that once importation is allowed, that either legal or illegal distribution could occur. She noted that the UH College of Tropical Agriculture and Human Resources (CTAHR) already has genetic data that shows that the tilapia species of concern are already in the wild, and that she often goes on Craigslist and sees people selling unspecified tilapia species. She agreed with Mr. Goggins’ sentiment that the fact that this is occurring should not be justification for allowing import, but that scientific data should be gathered about specific watersheds that would be impacted by the introduction of Nile tilapia. She said that the presence of tilapia species has already made their impacts, and that this request is about a bio secure facility that is proposing to use the strain of tilapia that is the least likely to impact anchialine ponds, marine ecosystems, and/or brackish water, where the most concern is from an ecological perspective. Dr. Haws said the best way to mitigate the impact is to control the problems in the impacted habitat as opposed to banning this species.

Advisory Committee member Matsui said that Nile tilapia has a high feed conversion ratio, which means that less input is required to produce the same amount of fish, resulting in less waste and therefore less pollution. He said that the reduction in pollution is a good thing, refencing the Ala wai canal and algae killing off the corals there. Advisory Committee member Okano said that he has personally caught o‘opu in Manoa stream and that while the water may not be pristine, native organisms are still present. Advisory Committee member Anderson said that while the pollution in the Ala Wai does cause the algae to thrive, it isn’t the primary reason for the disappearance of native species, but that it is the presence of non-native predators, including tilapia.

Advisory Committee member Okano said that he did some research on KMFC and said that they have nice facility, good operation, and that they utilize their effluent as fertilizer. He said that the effluent is not an issue in this case; however, the risk that Nile tilapia poses to the environment is too great for DLNR. Advisory Committee Chairperson Hoffman asked Advisory Committee member Okano if there were any changes to the permit conditions that he would like to make. Advisory Committee member Okano said that he would like to have all fish leave the facility dead. Dr. Hoffman asked Mr. Oliva how that would affect his operation. Mr. Oliva said that their model is like a co-op where KMFC would provide the necessary feed, equipment and fish for the co-op partners to produce the fish, and then KMFC would buy the full-grown fish from them. He said that *O. niloticus* is the best species for their plan, but that *O. mossambicus* could be used. Mr. Oliva said that their processing facility is able to process 50 million pounds per year, and that Kohala’s aquaculture facility can produce about 6 million pounds of tilapia per year by itself. He said the intent is to grow the market and the industry within the State, and that if the live transfer of *O. niloticus* is not allowed, they would keep the *O. niloticus* on site and utilize *O. mossambicus* for the co-op.

Advisory Committee member Matsui asked Mr. Oliva if co-op partners would be subject to the same requirements as KMFC. Mr. Oliva said that all users would have to meet the same requirements and that they would need permits and approvals prior to receiving any live fish. He said that because their fish would be sold under the KMFC company labelling, the live fish would not be sold to just any farm, but only to those farms that can meet the requirements for the labelling.

Advisory Committee member Matsui asked if the Nile tilapia permits could be approved on a case by case basis after going through a full Board review and approval, essentially eliminating the ability for the PQB to administratively issue permits for Nile tilapia. Advisory Committee Chairperson Hoffman asked Acting PQB Manager Ho how he would phrase that as a permit condition. Acting PQB Manager Ho said that a new permit condition could be created that could be worded be along the lines of “all permits for the restricted articles shall be approved by the Board.” Advisory Committee Chairperson Hoffman asked if the Advisory Committee would be able to review requests before it is reviewed by the Board. Acting PQB Manager Ho said that because the Advisory Committee is part of the Board review process, the Advisory Committee would have the opportunity to review.

Advisory Committee member Anderson said that he needed to leave soon for another appointment but suggested that the applicant resubmit their application to address the concerns raised at the meeting. He said that at this time, he would vote against the importation of Nile tilapia and did not think that there were conditions that could be drafted that would sufficiently address the risk. Advisory Committee member Anderson said that he agrees with the concept that the applicant is proposing, but that the applicant should use species that already exist in the state, and not a species with so many questions about its invasiveness. He said Hawaii already has a problem with invasive species and it would be unwise to exacerbate that problem. Advisory Committee member Anderson said conditions could conceivably be created to limit introduction only to this applicant, but it would preclude them from accomplishing their goal.

Advisory Committee member Anderson asked if he could leave his vote as a disapproval. Deputy Attorney General (DAG), Jennifer Waihee-Polk, said that a vote can be taken now. There was a discussion by the Advisory Committee regarding the appropriate phrasing of a recommendation to the Board to disapprove the request. Advisory Committee member Okano then made a motion to recommend that the Board disapprove the request to allow the importation of Nile tilapia and the request to establish permit conditions. Advisory Committee member Anderson asked if the request is disapproved by the Board, could the applicant come back and resubmit a new application. Acting PQB Manager Ho said if the Board disapprove a request, the applicant cannot resubmit an application for the same species unless the request is significantly different from the original request. Advisory Committee member Anderson asked if the Committee recommends disapproval, could the Board then approve it. Acting PQB Manager Ho said yes. Advisory Committee Chairperson Hoffman asked if the motion could be rephrased as a motion to approve. DAG Waihee-Polk said that Advisory Committee member Okano would need to withdraw or amend his motion. Advisory Committee member Okano said he would not amend his motion to recommend approval. Advisory Committee member Haws said that she would make a motion to recommend approval. Advisory Committee member Okano said that he would withdraw his original motion.

Advisory Committee member Haws said that this debate has been going on for twenty years, and there are a lot of farmers that are looking to import this fish. She was disappointed that there was no statewide policy regarding this species so that individual applicants would not have to continually spend time and money to go through the review process, to have the same issues revisited over and over. Advisory Committee member Haws made a motion to recommend that the Board approve the request to allow the importation of Nile tilapia, and to establish permit conditions as proposed in the submittal presented by the PQB. Advisory Committee member Matsui seconded the motion. Advisory Committee member Anderson said that Nile tilapia has been repeatedly requested and repeatedly denied for good reason. Advisory Committee Chairperson Hoffman called for a vote on the motion. Four Advisory Committee members voted in favor of the motion to recommend approval, two Advisory Committee members voted against the motion. The motion failed.

DAG Waihee-Polk suggested that if the Advisory Committee is at an impasse, that a motion be made to send the request to the Board without a recommendation from the Advisory Committee. Advisory Committee member Anderson said that as the request stands now, no additional information would change his stance. Advisory Committee member Redman said another alternative is for Advisory Committee members to attend the Board Meeting and provide testimony. DAG Waihee-Polk said that the discussion, comments, and votes made by the Advisory Committee at this meeting would be in the submittal provided to the Board for their review. Advisory Committee Chairperson Hoffman made a motion to move the request to the Board with no recommendation from the Advisory Committee. Advisory Committee member Redman seconded the motion.

Vote: APPROVED 6/0

Motion passes.

1. ADJOURNMENT

Having no further business, Committee member Ken Redman moved to adjourn the meeting. The motion was seconded by Committee member Ryan Okano and was unanimously approved. The meeting was adjourned at 4:08 P.M.

Vote: APPROVED 6/0

Respectfully Submitted,

Karen Hiroshige

Advisory Committee Secretary