GENERAL INFORMATION AND INSTRUCTIONS

**ANIMAL SUBJECTS REVIEW FORM**

**IMPORTANT:**

**Allow a minimum of 4-6 weeks for protocol approval.**

**SUBMIT ONE ORIGINAL WITH ALL SIGNATURES TO:**

**Office of Research Compliance**

**115 Ramsay Hall Basement**

**Wilmore Drive**

**Auburn, University 36849**

**Phone: 334-844-5966**

**Or scan/email to:** [**IACUCadmin@auburn.edu**](mailto:IACUCadmin@auburn.edu)

**IACUC Website:** [**https://cws.auburn.edu/OVPR/pm/compliance/iacuc/home**](https://cws.auburn.edu/OVPR/pm/compliance/iacuc/home)

University policy requires that all research, teaching, production/maintenance, and demonstration activities involving vertebrate animals be approved by the Auburn University Institutional Animal Care and Use Committee (IACUC) prior to initiation of the project. The *Auburn University Policies and Procedures for the Care and Use of Live Vertebrate Animals* is available on the IACUC website. This policy is in accordance with federal regulations and guidelines.

When submitting the original, the General Information and Instructions and the Additional Information sections should be omitted.

The IACUC meets the first and third Thursdays of each calendar month. Protocols received at least seven days prior to a scheduled meeting date (e.g. by 11:30 a.m. on Thursday of the week prior to a scheduled Thursday p.m. meeting) will be placed on the agenda. Approved protocols will be assigned a PRN (protocol review number). Approved Animal Subjects Review Forms will remain in the official files of the University for not less than three years beyond the completion of the project.

Annual review of all protocols is required. An Annual Review Form will be sent to the Principal Investigator approximately 30 days prior to the Annual Review Due Date.

Animal users are required to become familiar with all guidelines and regulations pertaining to the care and use of animals in research and teaching by visiting the Animal Welfare Information Center (AWIC) website: <http://www.nal.usda.gov/awic/>

An Animal Subjects Review Form may be obtained by downloading it from the IACUC website. Only the current version ASRF 04/2012 will be accepted.

Complete this form by providing **BOLD TYPED** answers in the text boxes in each item. All acronyms must be spelled out upon first use. If an item is not applicable, please indicate NA. The attached REQUIRED Checklist must be completed and included with the original protocol.

**ALL SIGNATURES are required for the protocol to be eligible for placement**

**on the IACUC meeting agenda.**

### ANIMAL SUBJECTS REVIEW FORM

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| **PRINCIPAL INVESTIGATOR:** | | | | | | **Matthew J. Catalano** | | | | | | |
| RANK/TITLE: | | | | Assistant Professor | | | | | | |  | |
| DEPARTMENT: | | | | Fisheries, Aquaculture, and Aquatic Sciences | | | | | | |  | |
| COLLEGE/SCHOOL: | | | | Agriculture | | | |  | |  | | |
| CAMPUS ADDRESS: | | | | 203 Swingle Hall | | | | | CAMPUS PHONE #: | | | 334-844-7366 |
| E-MAIL: | | [Mjc0028@auburn.edu](mailto:Mjc0028@auburn.edu) | | | | | | | FAX #: | | | 334-844-9208 |
|  | **Check if PI will serve as faculty advisor to the Lead Graduate Student or Resident associated with this activity.** | | | | | | | | | | | |
| **LEAD GRADUATE STUDENT/RESIDENT:** | | | | | | |  | | | | | |
| RANK/TITLE: | | |  | | | | | |  |  | | |
| DEPARTMENT: | | |  | | | | | | CAMPUS PHONE #: | | |  |
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| **CO-INVESTIGATOR:** | | | | |  | | | | | | | |
| RANK/TITLE: | | |  | | | | | |  |  | | |
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|  | **Check box if this protocol has more than one co-investigator. Additional co-investigators should be listed on page 2.** |

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| --- | --- | --- | --- | --- | --- |
| **PROJECT TITLE:** | **Factors affecting largemouth bass and bluegill populations in Alabama ponds** | | | | |
| **STARTING DATE:** | **4-1-2017** | | **EXPIRATION DATE:** | **3-31-2020** | |
| *(Must not be prior to IACUC approval)* | |  | *(Must not exceed three years)* | |  |

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| **Is any part of the funding from a U.S. Public Health Service Agency:** | **YES** |  | **NO** | **X** |

**REQUIRED SIGNATURES**

The information contained on this form provides an accurate description of the animal care and use protocol which will be followed. I agree to abide by governmental regulations and university policies concerning the use of animals. I will allow veterinary oversight to be provided to animals showing evidence of pain or illness. If the information provided for this project concerning animal use should be revised, or procedures changed, I will so notify the committee of those changes in writing, and no proposed changes will be implemented until full IACUC approval has been granted.

**X**

# Principal Investigator Date

Medical care for animals will be available and provided as indicated by a qualified veterinarian. By accepting this responsibility, the veterinarian is providing assurance that any personal interest he/she might have in the project will not conflict with his/her responsibility for the provision of adequate veterinary care for the animals. Furthermore, the veterinarian provides assurance of review and consultation on the proper use of anesthetics and pain relieving medications for any painful procedures.

|  |  |  |
| --- | --- | --- |
|  |  | **X** |
| **Project Veterinarian Name (print or type)** |  | **Project Veterinarian Signature Date** |
|  |  | **X** |
| **Unit Veterinarian Name (print or type)** |  | **Unit Veterinarian Signature Date** |
|  |  | **X** |
| **Departmental Chairperson Name (print or type)** |  | **Departmental Chairperson Signature Date** |
| **X** |  | **X** |
| **Lead Graduate Student/Resident signature Date** |  | **\*IACUC Chair Signature Date**  \*IACUC Chair signs the protocol after IACUC approval has been granted |

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| RANK/TITLE: |  | |  |  | |
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**PLEASE TYPE IN BOLD FONT AND COMPLETE THE FOLLOWING FORM IN FULL.**

**IMPORTANT: Allow a minimum of 4-6 weeks for protocol approval.**

1. Will the animals be used in:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A. | Teaching |  | If Teaching, give the course number(s): |  |
| Research | **X** |  |  |
| Demonstration |  |  |  |
| Production |  |  |  |

B. If Teaching, complete the following chart:

|  |  |  |  |
| --- | --- | --- | --- |
| Number of Students in the Class | Number of Students per animal | Number of Animals per Lab | Number of Labs per year |
|  |  |  |  |

1. A.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Animal Common Name | Total Used1 | Sex | Approximate Weight | Source2 | Housing Location3 |
| **Largemouth bass captured and released** | **14,100** | **Both**  **50/50** | **10 – 2,500 g** | **Existing natural population** | **AU Fisheries Department ponds (n=16;S1,S6,AE1,**  **S3,AE2,S5,S7,S22,S24,S2,FP11,S15,S16,S30,S28,S11), AU E.V. Smith Ponds (n=4), AU main campus ponds (n=4), private ponds (n=5)** |
| **Largemouth bass euthanized for ageing or harvest** | **9,900** | **“** | **10 – 2,500 g** | **“** | **“** |
| **Bluegill captured and released** | **33,350** | **“** | **1 – 400 g** | **“** | **“** |
| **Threadfin shad** | **600** | **“** | **1 – 100 g** | **“** | **“** |

1The number(s) listed in this column must match the total number of animals described in Question #7.

2 If reusing animals from another protocol, please provide the protocol number and assurance statement that the animals’ well-being has not been compromised by previous research and that the animals exhibit normal physiologic function. Please state how well-being and normal physiologic function

was determined for these animals (i.e. physical exam prior to accepting animals for use in protocol).

**SOURCE NOTE: Fish in the AU Fisheries ponds were previously stocked under PRN 2012-2086 and/or are currently under PRN 2015-2708. The well-being of these fish has not been compromised. We know this because the fish are living in a natural pond system and require no care or maintenance.**

3 Please state the housing facility as well as the area (ft2 or m2) allocated per animal in cages, stanchions, floor pens, etc. and the reference used to determine the area i.e. *Ag Guide* (2010) or *Guide* (2011).

B. Select pain/distress category relevant to the use of animals in this study.

(*See Item 2B of Additional Information at the end of this form.)*

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| --- | --- | --- | --- | --- | --- | --- | --- |
| B |  | C | **X** | D |  | E |  |

3. Will animals be maintained for a period of 12 or more consecutive hours in a location other than the housing location mentioned in Item 2? (*See Item 3 of Additional Information at the end of this form.*)

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| --- | --- | --- | --- | --- |
| Yes |  |  | No | **X** |

If Yes, specify the location and reason:

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|  |

If Yes, how will the animals be transported to that location, by whom, and was this vehicle inspected and approved by IACUC?

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4. PERSONNEL QUALIFICATIONS (*See Item 4 of Additional Information at the end of this form.*)

IACUC-required CITI training and Occupational Health & Safety Program (OHSP) Enrollment for all individuals listed in section 4.A and 4.B must be completed prior to protocol approval.

1. Indicate who will provide daily care and maintenance of the animal(s). Indicate name(s) or identify the particular unit staff.

|  |
| --- |
| **Matthew Catalano - No daily care will be necessary. All fish populations are self sustaining. Periodically, water quality (dissolved oxygen, algal biomass) and water levels will be checked. Daily care and maintenance of the AU fish is covered under PRN 2015-2708, but there is no daily care and maintenance required because these are wild fish populations that exist in a natural state.** |

1. List the names of all individuals who will conduct procedures involving animals on this protocol. Any individual not identified by name prior to protocol review will not be approved to conduct procedures. To add personnel after IACUC review and approval of the protocol, a *Personnel Modification Form* must be submitted and approved by the IACUC. These personnel must complete the CITI training and OHSP enrollment.

|  |
| --- |
| **Matthew Catalano** |

1. Principal Investigator Certifications

My signature on page 1 of this form certifies that:

1. Individuals performing animal procedures on this protocol are or will be qualified to perform their particular animal related duties through training and/or experience (individuals will be supervised until adequate training has occurred). Training and/or experience must encompass the following: \*biology, handling, and care of the species; aseptic surgical methods and techniques (if applicable); the concept, availability, and use of research or testing methods that limit the use of animals or minimize distress; the proper use of anesthetics, analgesics, and tranquilizers (if applicable); and procedures for reporting animal welfare concerns. Informative links regarding training resources can be found on the IACUC website.
2. All individuals working with animals, animal tissues, or animal products on this protocol will be informed of relevant \*occupational health and safety issues prior to performing their duties. \* Informative links have been provided for assistance in this and other areas as needed on the IACUC website.

5. State HOW or WHY you selected the species to be used in this project.

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| **Largemouth bass are an important sport fish stocked by private pond owners throughout the USA. Bluegill serve as prey for largemouth bass and reach a size large enough to serve as sport fish. If left unmanaged, largemouth bass populations become too dense due to high reproductive rates. High densities lead to poor growth and condition, which is undesirable for anglers. Bluegill growth, condition, and reproductive rates vary in response to largemouth bass population structure and pond conditions. Understanding factors affecting growth, condition, and reproductive rates of these species would be of great value to pond owners and fishery managers so that they can make better predictions of the response of their pond fish populations to management actions.** |

6. STUDY/ACTIVITY JUSTIFICATION AND OBJECTIVES:

1. Justify your animal use in one or two brief paragraphs:

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| --- |
| **The Fisheries Department at Auburn University has an internationally-known research program to improve sportfish and fishing in small ponds and lakes. Largemouth bass and bluegill are the most important fish species in these systems. Achieving satisfactory fish growth, body condition, and reproduction are central goals of small pond fishery management. If left unmanaged, largemouth bass populations become too dense due to naturally high reproductive rates, which can lead to undesirable population structure. Thus management actions are taken to prevent high largemouth bass densities from occurring or mitigate its effects. We are interested in three management actions to prevent or mitigate high bass densities: (1) harvesting largemouth bass (culling; ie thinning the population), (2) stocking largemouth bass at lower densities, and (3) stocking threadfin shad as an additional high quality prey species. Natural pond conditions such as pond size/depth and productivity also affect population characteristics and are of interest.**  **To understand factors affecting largemouth bass and bluegill growth, condition, and reproductive rates, we must sample largemouth bass and bluegill populations across a wide range of ponds that vary in natural characteristics and/or management. One of the three management actions we are interested in is harvest. We will be applying this treatment at two of the ponds and therefore must humanely harvest largemouth bass from these two ponds. In addition, in order to determine growth (length-at-age) and reproductive rates we must euthanize a subsample of largemouth bass from each pond for age determination. All other fish will be captured and released alive shortly after capture.** |

1. What are the main objectives of your study:

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| --- |
| **The main objective of this study is to evaluate factors affecting growth, condition, and reproductive rates of largemouth bass and bluegill in Alabama ponds. Specifically we are interested in the influence of (1) threadfin shad, (2) harvest rates, (3) largemouth bass stocking rates, and (4) natural characteristics (pond size and productivity).** |

7. A. SUMMARY OF PROPOSED ACTIVITY: USE LAY TERMS to give a description of the proposed

activity. *From reading this section it should be possible for a non-scientist to determine exactly how*

*animals will be used in the context of the proposed activity.*

This section should include a clear description of the EXPERIMENTAL DESIGN (research protocols) or activities involving animals (teaching, demonstration, or production/maintenance protocols). This section should also include a brief description of each phase of activities involving animals and should make it possible to account for all animals requested in Item 2. Tables may be helpful to show animal numbers. Justification for animal numbers is required to assure that only the necessary number of animals is being used. If applicable, include the technique, location and volume of blood drawn. If applicable, describe method of transportation and/or method of restraint. (*See Item 7 of Additional Information at the end of this form for guidance in providing the appropriate information.)*

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| **We will include 29 previously-stocked ponds in this study. The ponds will vary in their natural characteristics (productivity, surface area) and management. Three of the ponds have existing threadfin shad populations and three that lack threadfins will serve as controls. Ten of the ponds were previously stocked with varying densities of largemouth bass, which is thought to be associated with growth and condition of both species. Two of the ponds will undergo harvesting and two unharvested ponds will serve as controls. The remaining 9 ponds are highly variable in terms of natural conditions and will help to elucidate effects of pond characteristics (pond surface area and productivity) on largemouth bass and bluegill. Statistical power analysis suggests that sampling this number of ponds would provide sufficient power (i.e., 80%) to detect effects of harvest, threadfin shad, stocking rates, and pond characteristics.**  **Standard Electrofishing Samples:**  **We will sample each pond once per year in March or April (i.e, four samples: April 2017, 2018, 2019, March 2020) by electrofishing for 30 minutes along the shoreline (Reynolds 1996). Fish will be removed from the water during electrofishing using hand nets and placed in an aerated, covered, 50 gallon tub in the boat and anesthetized in a solution of 100 mg/l MS-222 to sedate the fish. All captured largemouth bass, bluegill, and threadfin shad will be measured (on a moistened measuring board) and weighed (on a scale) in the boat (Kelsch and Sheilds 1996). Previous pond studies suggest that we should anticipate capturing approximately 100 largemouth bass, 100 bluegill, and 50 threadfin shad per pond. Largemouth bass not needed for ageing analysis or harvest (see below) and all bluegill will be allowed to recuperate in a tank containing fresh aerated water for 5 minutes before being released back into the lake near their point of capture. We will need 50 largemouth bass per pond for ageing, so we will capture and release a total of 50 fish (exclude 50 of the 100 for ageing)\*27 (exclude 2 of 29 for harvest) ponds\*4 samples=5,400 bass from standard electrofishing. We will also capture and release a total of 100 bluegill\*29 ponds\*4 samples=11,600 bluegill and 50 fish\*3 ponds\*4 samples=600 threadfin shad.**  **Largemouth Bass Age Determination:**  **We must determine the ages of a random subsample of 50 largemouth bass per pond (excluding the two harvested ponds because in those ponds we will age the harvested fish) per sample (4 samples) because age data are necessary to estimate growth and reproductive rates. Power analyses suggest that 50 fish will be necessary for adequate growth estimates and separation of age classes. These fish must be euthanized because we will extract their ear bones to determine the ages of the fish (Devries and Frie 1996). These bones have annual growth rings similar to that of a tree. Fish selected for age determination will be immediately euthanized in 300 mg/l MS-22 solution, stored on ice, and returned to Auburn for otolith removal. We will euthanize a total of 50 fish\*27 (exclude 2 for harvest) ponds\*4 samples=5,400 largemouth bass for age determination.**  **Largemouth Bass Harvest:**  **We must conduct largemouth bass harvest at two of the ponds concurrent with standard electrofishing in 2017, 2018, and 2019. We will be testing the performance of the traditionally recommended harvest rate of 150 largemouth bass per acre (Schramm and Willis 2012) and the ponds are approximately 5 acres each so the total number harvested will be 150/ac\*5 ac/pond\*2 ponds\*3 years = 4,500 largemouth bass. Each year we will electrofish all areas of these two ponds until our target of 750 largemouth bass per pond is met, which should be achieved in one day of electrofishing per year. After the first 30 minutes of sampling in which bluegill will be collected and released as described in “Standard Electrofishing Samples” above, no other fish other than largemouth bass will be collected for the remainder of these harvest events. Harvested largemouth bass will be immediately euthanized in 300 mg/l MS-22 solution, then measured, weighed, stored on ice, and returned to Auburn for age determination by otolith extraction.**  **Seine Hauls:**  **We will use seines to capture young-of-the-year (age-0) largemouth bass and bluegill at each pond once per year to assess reproduction (Hayes et al. 1996; page 204). A seine is a basic net that is pulled along the shoreline by two operators, one at each end, that scoops up the fish located along a 10-15-foot section of shore line out to a depth of about 3 feet. We will do one standard shoreline seine haul with a 15X4-foot seine with 1/8 inch mesh at 10 sites per pond in June. Power analysis suggests that 10 seine hauls are adequate to detect a 50% difference in mean catch rates between ponds with 80% statistical power. Previous sampling suggests that we should anticipate capturing 10 age-0 largemouth bass and 25 age-0 bluegill per seine haul. These fish will be quickly counted and returned immediately to the pond near the point at which they were captured. Thus we anticipate capturing and releasing a total of 10 fish\*10 hauls\*29 ponds\*3 years=8,700 largemouth bass and 25 fish\*10 hauls\*29 ponds\*3 years =21,750 bluegill from seining.**  **Summary of Animals Used:**  **Largemouth bass captured and released alive**  **Standard electrofishing 50 fish\*27 ponds\*4 samples=5,400**  **Seine hauls 10 fish\*10 sites\*29 ponds\*3 years=8,700**  **TOTAL=14,100**  **Largemouth bass euthanized**  **Age determination only 50 fish\*27 ponds\*4 samples=5,400**  **Harvest and age determination 5 acres/pond\*2 ponds\*150 fish/acre\*3 years=4,500**  **TOTAL=9,900**  **Bluegill captured and released alive**  **Standard electrofishing 100 fish\*29 ponds\*4 samples=11,600**  **Seine hauls 25 fish\*10 sites\*29 ponds\*3 years=21,750**  **TOTAL=33,350**  **Threadfin shad captured and released alive**  **Standard electrofishing 50 fish\*3 ponds\*4 samples=600**  **TOTAL=600**  **DeVries, D.R., and R.V. Frie. 1996. Determination of age and growth. Pages 483-512 in B.R. Murphy and D.W. Willis, editors. Fisheries Techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.**  **Hayes, D. B., C. P. Ferreri, and W. W. Taylor. 1996. Active fish capture methods. Pages 193-220 in B.R. Murphy and D.W. Willis, editors. Fisheries Techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.**  **Kelsch, S.W., and B. Shields 1996. Care and handling of sampled organisms. Pages 121-155 *in* B.R. Murphy and D.W. Willis, editors. Fisheries Techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.**  **Reynolds, J.B. 1996. Electrofishing. Pages 221-253 *in* B.R. Murphy and D.W. Willis, editors. Fisheries Techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.**  **Schramm, H. L and D. W. Willis. 2012. Assessment and harvest of largemouth bass-bluegill ponds. Pages 181-213 in J. W. Neal and D. W. Willis, editors. Small impoundment management in North America. American Fisheries Society, Bethesda, Maryland.** |

B. For experiments regarding food and/or fluid restriction:

1. Describe animal health monitoring procedures and frequency (e.g. body weight, blood urea

nitrogen, urine/fecal output, food/fluid consumed):

|  |
| --- |
| **N/A** |

1. Describe methods of ensuring adequate nutrition and hydration during the regulated period:

|  |
| --- |
| **N/A** |

C. If this research involves production of genetically modified animals or is a pilot study and has the potential to result in unexpected outcomes, please address the following:

1. New phenotypes or other unanticipated results which may affect animal health and well-being.

|  |
| --- |
| **N/A** |

1. Method for monitoring and managing unexpected outcomes to assure animal health and well-being.

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| --- |
| **N/A** |

1. Procedure for reporting unexpected outcomes to the IACUC.

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| --- |
| **N/A** |

D. If exterior windows are present within the animal housing or procedure areas, describe how this may affect temperature and photoperiod control, as well as potential security risks.

|  |
| --- |
| **N/A** |

E. If this is a field study involving observation or use of a non-domesticated vertebrate species, please respond to the following:

1. What is the potential impact on the wild population of the species to be studied?

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| --- |
| **The potential impacts of captureing and releasing fish after standard electrofishing and seining is minimal due to the large size of these populations and the fact that fish will be released alive in good condition very near to their point of capture. The potential impact of euthanizing largemouth bass for ageing is low due to the large size of these populations relative to the 50/pond/year that will be aged. The potential impact of harvesting on these populations is the desired reduction in population density, which could lead to increases in growth and body condition of largemouth bass and changes in bluegill population size structure due to reduced predation from largemouth bass. However, the harvesting has a near zero probability of reducing the largemouth bass population abundance to the point at which the population could become extirpated in the pond.** |

1. How might the study compromise health of either animals or persons e.g. zoonoses?

|  |
| --- |
| **We do not anticipate negative health effects of animal or people.** |

1. Describe the final disposition of the animals being studied (i.e. return to wild population, preserve in museum collection, etc).:

|  |
| --- |
| **All live fish will remain in the pond in which they were captured. After processing for ageing, largemouth bass carcasses will be disposed of at the North Auburn Fisheries Station by composting per PRN 2015-2708, the Standard Operative Procedures protocol for the Auburn Fisheries Research Unit.** |

F. Humane endpoints:

1. If pain/distress category D/E or food/fluid restriction is applicable to this protocol, please define humane endpoints:

|  |
| --- |
| **N/A** |

1. If research is novel and little or no information is available in the literature, state who you have collaborated with to define humane endpoints; please define humane endpoints resulting from your collaboration; state how you will periodically communicate with the IACUC to ensure the well-being of the animal(s) on this protocol:

|  |
| --- |
| **N/A** |

1. For category C and all other protocols where the potential exists for weight loss and/or other

parameters that could be potentially harmful to the animals, state the humane end points:

|  |
| --- |
| **Largemouth bass that must be used for ageing and harvest will be humanely euthanized by immediately placing them in a solution of 300 mg MS-222/liter. The sampling techniques that will be employed have proven to cause low stress to captured animals. Fish that are destined for release will be measured and weighed promptly and returned to the wild to minimize stress and harm. Animals that are destined for release but appear unable to regain equilibrium within 10 minutes or show obvious signs of distress, will be recaptured and euthanized using the lethal dose of MS-222 described above.** |

G. Environmental Enrichment: *(See Bloomsmith et al. Lab Anim. Sci. 41:372-377); also the Ag Guide*

*(2010) has a good discussion on this topic by species in Chapter 4*.

1.) Social enrichment: Please describe direct or indirect animal contact (visual, olfactory, auditory)

with conspecifics or humans.

|  |
| --- |
| **N/A** |

2.) Occupational enrichment: Please describe any devices that provide animals with control or

challenges (psychological enrichment); enrichment that encourages exercise.

|  |
| --- |
| **N/A** |

3.) Physical enrichment: Please describe alteration of the size or complexity of the animal’s

enclosure which may include objects, substrate or permanent structures (e.g. nestboxes, rocks

and hiding places in an aquatic environment).

|  |
| --- |
| **N/A** |

1. Sensory enrichment: Please describe visual stimuli (television); auditory stimuli (music, vocalizations); olfactory, tactile, taste stimuli.

|  |
| --- |
| **N/A** |

1. Nutritional enrichment: Please describe presentation of varied or novel food types; changing the method of food delivery.

|  |
| --- |
| **N/A** |

1. Other types of enrichment: Please describe any other types of enrichment that do not fit the categories above.

|  |
| --- |
| **N/A** |

1. No Enrichment: Please justify the decision to provide no environmental enrichment if you have not responded to #7. G. 1-6 above.

|  |
| --- |
| **N/A** |

1. If category D or E was chosen in Question 2B, please complete the following. (*See Item 8A of*

*Additional Information at the end of this form.)*

1. Database(s) searched or other sources consulted to determine the availability of alternatives.

|  |  |  |  |
| --- | --- | --- | --- |
| Database Searched | **X** | Date of Search | Years Covered |
| Medline |  |  |  |
| Agricola |  |  |  |
| CABA |  |  |  |
| Altweb |  |  |  |
| Other (describe) |  |  |  |

1. Scientifically relevant terminology (e.g. keywords) and search strategy used when considering alternatives to the painful or distressful procedure(s):

|  |
| --- |
| **N/A** |

1. A succinct written narrative based on results of the database search, that will permit the IACUC to readily assess whether the search topics were appropriate and whether the search was sufficiently thorough. This narrative must address the following:

Reduction:

|  |
| --- |
| **N/A** |

Replacement:

|  |
| --- |
| **N/A** |

Refinement:

|  |
| --- |
| **N/A** |

1. If alternatives are available but will not be used, provide a justification.

|  |
| --- |
| **N/A** |

1. If pain/distress category E is to be employed, provide a justification for withholding pain and/or distress relieving drugs.

|  |
| --- |
| **N/A** |

1. SURGERY:

Will surgery be performed?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Yes |  |  | No | **X** |

If yes, please address the following, as applicable:

1. Non-survival surgery - Describe all surgical procedures, including surgical preparation. Indicate where surgery will be performed (building and rooms). Identify the person(s) and DESCRIBE their qualifications for performing the particular surgical procedure(s).

|  |
| --- |
| **N/A** |

1. Survival surgery - Describe all surgical procedures, including surgical preparation. Indicate that aseptic technique will be followed if the procedure is a survival surgical procedure. Indicate where surgery will be performed (building and rooms). Identify the person(s) and describe their qualifications for performing the particular surgical procedure(s).

|  |
| --- |
| **N/A** |

1. Post-surgical Care - Describe POST-SURGICAL CARE including, who will be providing it (qualifications), what it will consist of, and where it will be provided (bldg., rooms).

|  |
| --- |
| **N/A** |

1. Administration of analgesics, anesthetics, tranquilizing drugs, and/or neuromuscular blocking agents (Indicate generic name, dose, route of administration and frequency; if by inhalation, method of scavenging waste anesthetic gases.)

|  |
| --- |
| **MS-222 (Tricaine), dosage = 100 mg/l for sedation and 300 mg/l for euthanasia of fish prior to preservation. The route of administration will be the addition to the water.** |

1. A. Administration of reagents, cells, drugs (other than anesthetics or analgesics), infectious agents, carcinogens, recombinant DNA, etc. (Indicate generic name, dose, route of administration and frequency, anticipated side effects, monitoring protocol.)

|  |
| --- |
| **N/A** |

If using cells, what is the source? Provide proper documentation to show that they are free from any infectious animal or human pathogens?

|  |
| --- |
| **N/A** |

1. If a non-pharmaceutical grade compound or chemical is being used, the following criteria must be addressed:
2. Provide a rationale for using less than pharmaceutical grade compounds. Cost savings alone do not adequately justify the use of non-pharmaceutical grade compounds in animals.

|  |
| --- |
| **N/A** |

1. Describe any expected side effects:

|  |
| --- |
| **N/A** |

1. Discuss the methods to be used to ensure sterility and storage of the drugs (e.g., sterile 0.22 micron filters, sterile diluent, storage in sterile vials, etc.):

|  |
| --- |
| **N/A** |

1. ASSURANCES:
2. Provide a brief statement to confirm that proposed activities involving animals do not duplicate previous experiments unnecessarily. If your protocol is a continuation of a previously approved project, include the PRN for the previous protocol and provide a brief statement summarizing previous work to justify study continuation.

|  |
| --- |
| **This proposed research has not been previously conducted. Part of this work is a continuation of PRN 2015-2708 in the sense that we are continuing to sample some of the ponds from that original study for the long term (>5 years). One gap in the pond fisheries research is the lack of long-terms studies. Thus continuing to sample these ponds will fill a gap in the literature. In addition to continuing the previous study, we are expanding the scope of the study to address additional questions regarding the effects of harvest and pond characteristics (surface area and productivity).** |

1. My signature on page 1 of this form certifies that exercise of caged dogs will be accomplished according to the Animal Welfare Act (AWA) or cage size provides adequate space for exercise to meet AWA requirements. Alternatively, explain why an exception should be approved by the IACUC.

|  |
| --- |
|  |

1. Will wild caught or endangered animals be utilized?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Yes | **X** |  | No |  |

If yes, the investigator is responsible for obtaining and maintaining valid permits (if required) for collecting, purchasing, transporting, and holding of these animals. List applicable federal and/or state permit numbers including expiration dates and attach copies of the permits to the protocol. Copies of active collection permits must be provided prior to protocol approval.

|  |
| --- |
| **Largemouth bass, bluegill, and threadfin shad are common and abundant fish, and are not listed under any Federal or State protected species list. Fish collection permits are not required from the State of Alabama to sample private waters or university property.** |

1. HAZARDOUS AGENTS

Use of hazardous agents in animals may require approval of the appropriate institutional committee. Contact the Department of Risk Management and Safety (844-4870) for specific information.

Copies of an approval letter from the IBC along with the approved BUA must be provided prior to protocol approval.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Hazardous Agent | Yes | No | Agent | Date of Committee Approval & BUA # |
| Radioisotopes |  | **X** |  |  |
| Biological Agents |  | **X** |  |  |
| Hazardous Chemicals or Drugs |  | **X** |  |  |
| Recombinant DNA |  | **X** |  |  |
| Physical Agent (UV, Laser, Noise, Magnetic fields, etc.) |  | **X** |  |  |

Describe the practices and procedures required for the safe handling and disposal of contaminated animals and material associated with this study. Also describe methods for removal of hazardous waste and, if applicable, the monitoring of hazardous waste.

|  |
| --- |
| **N/A** |

1. What will be the disposition of the animals at the termination of the project? If euthanasia is to be performed, what will be the method of carcass disposal?

|  |
| --- |
| **All live fish will remain in the pond in which they were captured. After processing for ageing, largemouth bass carcasses will be disposed of at the North Auburn Fisheries Station by composting per PRN 2012-2094, the Standard Operative Procedures protocol for the Auburn Fisheries Research Unit.** |

1. All protocols must include the method of euthanasia that will be used during the normal course of the protocol or in the event of unforeseen circumstances resulting from illness or injury. Please specify the method, agent, dose, and route of administration. The euthanasia method must be consistent with the *AVMA Guidelines for the Euthanasia of Animals: 2013 Edition* or justification for deviation should be indicated.

This document is available here: <https://www.avma.org/KB/Policies/Documents/euthanasia.pdf>

|  |
| --- |
| **Fish that will be sacrificed will be euthanized in a 300 mg/liter solution of MS-222 (Tricane) immediately upon collection. This follows the protocol listed in the AVMA Guidelines for the Euthanasia of Animals: 2013 Edition (page 70).** |

**REQUIRED CHECKLIST: *MUST be completed by the PI and attached to the original protocol submission.***

**Documentation of all items identified in Items II – VII is required prior to protocol approval.**

|  |  |  |  |
| --- | --- | --- | --- |
| **PI:** | **Mathew J. Catalano** | **Department:** | **Fisheries** |

**Project Title:**

|  |
| --- |
| **Factors affecting largemouth bass and bluegill populations in Alabama ponds** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| I. Is this protocol a continuation of or similar to a project/ SOP / activity previously  approved by the IACUC? | | |  | Yes |  | No |
| **X** |  |
|  |  |
| If yes, include PRN of previous protocol. | PRNs: | **PRN 2012-2086** | | | | |

II. List all individuals (PI, co-PI, Lead Graduate Student, and Other Individuals listed in Question #4B) who

will conduct procedures involving animals on this protocol.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Personnel | CITI | OHS | Project Personnel | CITI | OHS |
| Dr. Matthew J. Catalano (PI) |  |  |  |  |  |
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| --- | --- |
|  | Additional Individuals are Listed on the Next Page. |

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| --- | --- | --- | --- | --- |
| III. Will wild caught or endangered animals be utilized for this project? | **X** | Yes |  | No |
| If yes, are copies of active federal and/or state permits attached? |  | Yes | **X** | No |
| IV. Does the protocol involve Hazardous Agents or activities for which  IBC or other approvals are required? |  |  |  |  |
|  | Yes | **X** | No |
| If yes, are approval letters and BUA’s attached? |  | Yes |  | No |
| V. Does the protocol involve the use of privately owned animals? | **X** | Yes |  | No |
| If yes, is an owner consent form attached? |  | Yes | **X** | No |
| For CVM PIs, is the CRRC approval letter attached? |  | Yes | **X** | No |
| VI.Will animals used for this protocol be transferred to or from another institution? |  | Yes | **X** | No |
| If yes, is a copy of the institution’s IACUC attached? |  | Yes |  | No |
| VII.Does this protocol involve the use of Investigational New Animal Drugs (INAD)? |  | Yes | **X** | No |
| If yes, is the approved INAD attached? |  | Yes |  | No |

VIII. Please check all of the following that apply to this project:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Food and/or Fluid Restriction |  | Multiple Survival Surgeries |
|  | Survival Surgery |  | Variation from Exercise/Enrichment |
|  | Prolonged Physical Restraint |  | Variation from Euthanasia Guidelines |
|  | Variation in Blood Volume Limits |  | ”E” Pain Category |
|  | Unexpected Outcomes |  | Use of Freund’s Complete Adjuvant |
|  | Genetically Modified Animals Used |  | Variation From Housing Guidelines |

Additional space for listing individuals who will conduct procedures involving animals on this protocol:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Personnel | CITI | OHS | Project Personnel | CITI | OHS |
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**ADDITIONAL INFORMATION**

***THIS PAGE NEED NOT BE INCLUDED WHEN SUBMITTING FORM FOR REVIEW***

**Question 2B** USDA promulgated PAIN/DISTRESS CATEGORIES - Please use the following categories when categorizing the pain/distress level.

B Pain or Distress – None

Animals being bred, acclimatized, or held for use in teaching, testing, experiments, research or surgery BUT NOT YET USED for such purposes. Some examples would include:

* + - 1. Animals used in the Animal Production/Maintenance such as routine farm animal production operations and transgenic animal core facility breedinga.
      2. Animals being bred or housed without any research manipulation, prior to euthanasia or transfer to another protocol
      3. Animals used for demonstration purposes in teaching and outreach.
      4. Animals being held under an “administrative protocol” for reasons determined by the unit, project, or program veterinarian.
      5. Observation of animal behavior in the wild without manipulating the animal or its environment.

aThis does not include tail snips in mice used in genotyping. This is then a research use and puts it in higher pain/distress category.

C Pain or Distress - None or Minor

These include studies that DO NOT involve surgery; induction of painful or stressful disease conditions, or pain or distress in excess of that associated with routine injections or blood collection. Included are induction or transplantation of tumors in animals (as long as the tumors do not cause pain and the animals are terminated prior to becoming ill), administration of mildly toxic substances or pathogenic agents that cause no significant disease or distress, polyclonal antibody production (antigen inoculations and blood collection) as long as significant disease does not result, mild food restriction, and, typically, the collection of animals from the wild or from experimental units (i.e. fish in earthen ponds) for minor procedures. NOTE: If blood is to be collected via the retro-orbital or intracardiac methods, then anesthesia is required and Pain/Distress D must be selected. Also, if *in vivo* monoclonal antibody production is to be performed, the pain category D must be selected.

D Pain or Distress Relieved by Appropriate Measures

A major concern of the reviewers of these protocols is the degree of pain and/or distress imposed on the animals in the studies, and the methods the investigators will use to prevent, relieve, or minimize such pain or distress.

Following is a partial list of procedures known to involve significant pain and/or distress:

* + - 1. Surgical procedures such as biopsies, gonadectomy, exposure of blood vessels, chronic catheter implementation, laparotomy, or laparoscopy

2. Administration of any chemical or organism that would be expected to produce pains or distress but which will be alleviated by analgesics

3. Intracardiac or retro-orbital blood collections

4. Monoclonal antibody production (ascites method)

5. Other procedures which would be painful or distressful to the animal if performed without the benefit of anesthesia, analgesic, and/or tranquilization (e.g., exsanguination).

E Pain or Distress without Anestheia, Analgesia or Tranquilizers

If the nature of the study prohibits the use of pain and/or distress relieving drugs, or if unavoidable and unalleviated pain or distress will be produced, you must provide a written justification. (Include this in your response to Item 8, B, 5.) Such procedures include: direct stimulation of central nervous system pain tracts, nociceptor stimulation by physical or chemical means that cause severe pain (e.g., corneal abrasions), or any potentially painful procedure if performed without chemical relief of pain.

**Question 3** The IACUC is required to inspect animal housing areas and laboratories (at least twice per year) where animals are housed for 12 or more hours.

**Question 4** PERSONNEL QUALIFICATIONS:

Federal regulations require institutions to ensure that people caring for or using animals are qualified to do so through documented training or experience. This training is to include investigators, technical personnel, trainees, visiting investigators, and any other individuals who may perform animal husbandry, anesthesia, surgery, or other experimental manipulations involving animals.

**Question 7** Please use this procedure list for guidance in providing the necessary information. Please note that this is not meant to be an exhaustive list, but only a guide.

* **Body fluid sampling** (e.g. blood, cerebrospinal fluid, ascites, urine —describe method of collection, amount, frequency).
* **Antibody production** (indicate route of administration, volume administered per site, number of sites, adjuvant use and frequency, consideration of alternatives to Freund’s adjuvant, anticipated side effects, monitoring protocol).
* **Ascites method for monoclonal antibody production**. Auburn University requires adherence to the Office for Laboratory Animal Welfare (OLAW) policies concerning the production of monoclonal antibodies using the mouse ascites method. Please refer to the OLAW document <http://grants.nih.gov/grants/olaw/references/dc98-01.htm> Use of the ascites method requires justification as to why in vitro systems cannot be used.
* **Special diets** (describe any anticipated nutritional deficit or other health concerns).
* **Indwelling catheters or implants** (describe type, maintenance/monitoring protocol).
* **Restraint of an unanesthetized animal** other than that associated with brief routine procedures such as for the collection of blood (describe method, duration, frequency).
* **Tumor transplantation** (describe any anticipated functional deficit to the animal, monitoring protocol, endpoint).
* **Food or fluid restriction** (e.g. greater than that associated with pre-anesthetic procedures — describe, include justification and monitoring protocol.)
* **Special housing, equipment, animal care** (e.g. describe special caging, water, feed, waste disposal, etc.)
* **Experimental endpoint criteria** (list the criteria to be used to determine when euthanasia is to be performed. Death as an endpoint must always be scientifically justified.)
* **For experiments regarding new genotypes** that may result in unanticipated phenotypes, or other research involving unanticipated results, these results must be identified, interpreted, and reported to IACUC.

**Question 8A** The Animal Welfare Act (AWA) requires that the Principal Investigator (PI) consider alternatives and provide a written narrative of the sources consulted to determine whether or not alternatives exist to procedures which may cause pain or distress.

According to the Animal Welfare Information Center (AWIC) of the U.S. Department of Agriculture (USDA), an alternative to procedures that may cause more than momentary pain or distress to animals is any procedure which results in REDUCTION in number of animals used, REFINEMENT of techniques to alleviate such pain or distress, or REPLACEMENT of animals (e.g. with an insentient model such as might be accomplished through use of cell culture or computer simulation).

To explore a variety of resources for evaluating alternatives investigators may consult the following website: [http://www.aaalac.org/resources/links.cfm#alternatives](http://www.aaalac.org/resources/links.cfm%23alternatives)