WELCOME TO OUR FISH AGEING LABORATORY. THIS IS WHERE THE COASTAL RESOURCES DIVISION OF THE GEORGIA DEPARTMENT OF NATURAL RESOURCES STUDIES THE DATA WE'VE COLLECTED TO MAKE THE BEST DECISIONS POSSIBLE IN MANAGING IMPORTANT FISH SPECIES. EFFECTIVE SPECIES MANAGEMENT HELPS TO ENSURE A HEALTHY AND ABUNDANT POPULATION OF RECREATIONAL AND COMMERCIAL FISH, AND PRESERVES OUR VITAL ECO-SYSTEM.

COASTAL RESOURCES DIVISION BIOLOGISTS COLLECT, PROCESS, EVALUATE, AND PRESERVE THE "AGING STRUCTURES" OF PRIORITY FISH. "AGING STRUCTURES" ARE PARTS OF THE FISH ANATOMY THAT CAN BE EVALUATED TO DETERMINE THE AGE OF A FISH.

BY KNOWING THE AGE OF FISH, SCIENTISTS CAN ESTIMATE GROWTH RATES OF THE SPECIES, MAXIMUM AGE, AGE-AT-MATURITY, AND TRENDS FOR FUTURE GENERATIONS. THIS INFORMATION CAN ASSIST IN DETERMINING THE HEALTH AND SUSTAINABILITY OF GEORGIA'S FISHERIES.

OUR PROCESS BEGINS WITH THE HELP OF ANGLERS FROM ACROSS GEORGIA'S COAST. THE MARINE SPORTFISH CARCASS RECOVERY PROJECT ENCOURAGES ANGLERS TO DEPOSIT FILETED CARCASSES AT COLLECTION POINTS NEAR FISH CLEANING STATIONS, MARINAS AND PRIVATE DOCKS. ANGLERS PLACE THE CARCASSES IN CHEST FREEZERS AND COASTAL RESOURCES DIVISION STAFF LATER TRANSPORT THEM TO THE DIVISION'S AGING LAB IN BRUNSWICK. ANGLERS HAVE DONATED MORE THAN 65,000 CARCASSES SINCE THE PROJECT BEGAN IN 1997.

AFTER EACH FISH IS IDENTIFIED, MEASURED, AND ITS SEX DETERMINED, THE AGING LABORATORY WILL REMOVE A SMALL BONE CALLED AN OTOLITH. THE OTOLITH IS USED TO DETERMINE THE AGE OF THE FISH.

THESE SMALL BONES AID FISH IN BALANCE AND HEARING, FUNCTIONING IN A MANNER SIMILAR AS THE INNER EAR OF HUMANS.

OTOLITHS ARE SOMETIMES REFERRED TO AS EAR STONES OR EAR BONES. THEY ARE COMPOSED OF CALICIUM CARBONATE AND LOCATED IN THE FISH'S HEAD BEHIND THE EYE, JUST BELOW THE BRAIN.

EVERY YEAR ADDITIONAL CALCIUM CARBONITE MATERIAL BUILDS UP WITHIN THE OTOLITH. THIS PROCESS RESULTS IN ANNUAL BANDS, CALLED ANNULI. ANNULI ARE COMPARABLE TO GROWTH RINGS FOUND IN TREES.

THE OTOLITHS AMONG SPECIES VARY IN SHAPES AND SIZES. SOME OTOLITHS ARE LARGE AND CHUNKY LIKE THOSE FOUND IN RED DRUM AND BLACK DRUM. OTHERS ARE THIN AND FRAGILE, LIKE THE ONES FOUND IN SOUTHERN FLOUNDER AND SHEEPSHEAD. A SEASONED MARINE BIOLOGIST MAY BE ABLE TO DETERMINE THE FISH SPECIES BASED SOLELY ON THE OTOLITH.

COASTAL RESOURCES DIVISION BIOLOGISTS REMOVE THE OTOLITH BY MAKING AN INCISION IN THE FISH'S HEAD. ONCE THE OTOLITHS ARE REMOVED, THEY ARE CLEANED AND DRIED.

NEXT, A THIN SECTION IS CUT FROM THE OTOLITH USING A LOW-SPEED SAW WITH TWO DIAMOND BLADES. A THIN SECTION IS MADE THROUGH THE CORE, YIELDING A CLEAR VIEW OF ANNULI FORMED WITHIN THE OTOLITH. THE SECTION ARE EXAMINED UNDER A MICROSCOPE, AND AGE OBSERVATIONS NOTED.

SOME OF THE FISH AGED IN THIS MANNER INCLUDE: SPOTTED SEATROUT, RED DRUM, SOUTHERN KINGFISH (ALSO CALLED WHITING), ATLANTIC CROAKER, TRIPLETAIL, SHEEPSHEAD, AND SOUTHERN FLOUNDER.

THE DATA COLLECTED FROM THESE SPECIMENS ARE USED IN AGE-BASED POPULATION MODELS, ESTIMATES OF SPECIES MORTALITY RATES, AND LONGEVITY. THIS INFORMATION IS USED IN A STOCK ASSESSMENTS THAT PROVIDES STATISTICS AND INFORMATION NEEDED TO MANAGE FISHERIES.

IT’S ALL PART OF THE COASTAL RESOURCES DIVISON’S MISSION TO PROTECT AND PRESERVE GEORGIA’S COAST FOR THE BENEFIT OF PRESENT AND FUTURE GENERATIONS.