

## Archive Policy

The age-structure sample collection at the Northeast Fisheries Science Center (NEFSC) is available for loan to anyone involved with projects that promote better understanding of fishery biology and related areas. This collection is maintained by the Fishery Biology Program (FBP) at the Woods Hole laboratory of the NEFSC.

The archive consists of age samples, mainly fish otoliths and scales, which have been collected by the NEFSC from both commercial fisheries and fishery-independent surveys. The NEFSC age sample archives are one of the best and longest running for Northwest Atlantic species, and include some samples collected as long ago as the 1930s. Many species are represented in the collection, but not all species or samples have yet been processed and/or aged by the FBP.

Please see [Appendix A](#) for the list of archived species and structures.

In order to use or borrow samples from this collection, please submit a detailed request as described below. The FBP will consider all reasonable requests. However, we need to take into consideration that certain samples are irreplaceable, as they may be the only samples of their type in existence. As age samples are regularly destroyed or altered in the normal course of research, loans of these samples are in fact grants of a limited resource. As a result, our policy must prevent wasteful depletion of the collection.

We therefore retain the right to determine how these samples are best used to better scientific knowledge. Not all samples may be available for loans, and some samples may not be available for destructive analyses. Despite these caveats, it is not the intent of the FBP to prevent the use of the archived age samples in creditable scientific research.

## Destructive Use

We understand that destructive use of these samples is often necessary and unavoidable. Destructive use is defined as any analysis that destroys or alters all or a portion of a sample. This includes sectioning, etching, staining, laser ablation, etc. Formal requests for destructive use of NEFSC samples must be submitted, even if the samples are not removed from our facility.

All requests involving the destructive use of samples will be evaluated in relation to the relative significance of the study and the potential for either replacement or future serviceability of the samples. These factors may be mitigated by an agreement to create impressions (for scales) or digital photos (for otoliths and otolith sections) from the samples, and share these images with the FBP, before the samples are destroyed. Some samples may not be available for destructive use, or such use may be delayed due to other needs for those samples.

## Submission of Requests

Requests for archived samples should be submitted via email to the Archival Director by a representative of the requesting institution. Students must request loans through a faculty member involved in the project. The request must include:

1. Name and contact information of both the requesting researcher and their associated institution
2. A detailed abstract or outline of the proposed project, including the project's expected contribution to science
3. Which samples are requested, including the species, total number of samples, and preferred collection dates, locations, lengths, and any other relevant aspects of the samples
4. Full descriptions of what analyses will be performed on the samples, and evidence for the effectiveness of these methods, especially if there is to be any destructive use of the samples (Ideally, the most effective but minimally intrusive method should be used.)
5. Credentials (such as CVs) of the requesting researcher(s), and their experience with the proposed methods
6. Description of a plan for making the results of the project available to other researchers, stakeholders, and the general public (such as through peer-reviewed publication, presentation at scientific conferences, and/or online dissemination)
7. A list of what contribution other institutions (including the requesting institution) will make to meet the needs of the project

All such requests should be sent to:

[Sandy.Sutherland@noaa.gov](mailto:Sandy.Sutherland@noaa.gov)

If the request cannot be sent by email, it may be mailed to:

Fishery Biology Program (Attention: Archival Director)  
Northeast Fisheries Science Center  
NOAA Fisheries  
166 Water Street  
Woods Hole, Massachusetts 02543

## Approval Process

Decisions regarding the approval of requests will be evaluated based on the following criteria:

1. Evidence of a useful contribution to science resulting from the approval of the request
2. Expectation that the results derived from the loan of NEFSC samples will become available to other researchers, stakeholders, and the general public (i.e., peer-reviewed publication, scientific presentations, and /or online dissemination)
3. Qualifications and relevant experience of the requesting researcher(s)
4. FBP's need for the samples, relative to our own responsibilities and deadlines
5. If destructive uses are proposed, further considerations include:
  1. Appropriateness of the proposed methods within the context of the project
  2. Rarity and potential for replacement of the samples requested
  3. Preservation of samples via scale impressions or digital images
6. The requesting researcher should have no prior record of abuse of user privileges or improper handling of samples.

## Terms of Use

Once a request is approved, the recipient must agree to the following conditions for use of FBP samples:

1. Loans will be limited to a period of up to six months, although it is expected that samples will be returned promptly after the relevant project is completed. Extensions may be granted upon formal request, if satisfactory progress has been made toward completing the project and there are no pending requests for use of the loan material.
2. Loaned samples are for the sole use of the requesting researcher(s) and for the approved project only. They may not be used in secondary projects, nor passed on to third parties or institutions without prior approval.
3. Individuals will not be allowed to borrow samples for more than one project at a time.

4. All loans will be made to institutions, not individuals. The institution receiving the loan will be responsible for the proper handling and safe return of any samples loaned.
5. Samples must be returned in the same condition in which they were loaned, unless a prior agreement is in place regarding their destructive use.
6. If a project can be completed without removing samples from the FBP facility, that is preferable. All visitors to the facility must follow regular security procedures.
7. When shipping is necessary, FBP will assign a contact person to help locate and ship the requested samples. Samples will be shipped as is, with no additional processing prior to shipping.
8. Reasonable costs of shipping samples to the requesting researcher will be paid by FBP. If a request is made for large volume of samples, the researcher may be asked to assume shipping costs. FBP also reserves the right to delay shipping a portion of the collection until the first portion is safely returned.
9. Return shipping costs will be the responsibility of the requesting researcher or their institution.
10. When applicable, it is the responsibility of the requesting institution to obtain any permits required for legal transport of the samples and ensure that these forms accompany the shipment.
11. Loaned samples remain the property of NEFSC. Therefore, all samples must be returned, as well as any material remaining after destructive sampling. This includes thin sections and fragments of otoliths and shells.
12. Use of the loaned structures for commercial purposes is prohibited.
13. Published articles or reports resulting from the use of archived samples must acknowledge NEFSC. Suggested format: "[Otoliths/scales] were collected by the NOAA Fisheries Northeast Fisheries Science Center (NEFSC) and provided courtesy of NEFSC Fishery Biology Program."
14. Two reprints of each publication (or the link for an online publication) involving the use of archived samples must be sent to the Archival Director.
15. Any extensive involvement of FBP staff in proposed projects (additional ageing, re-ageing, training, interpretation, expert advice, etc.) should be identified in the initial loan request, and this involvement must be agreed upon by the individual(s) and their supervisor. In such cases, the individual(s) should be credited among the collaborators

and/or co-authors.

16. Abuse of these conditions may result in denial of future loan requests.

A formal agreement outlining these terms will be forwarded to the requesting researcher for their signature before the samples are shipped.

## Appendix A - Species Collected

This table lists the species for which we currently collect age samples, along with the structures and preparation methods for each one. Note that various additional species have been collected in the past, and structures collected historically may be different.

<b>Species</b>	<b>Latin name</b>	<b>Structure</b>	<b>Preparation Method</b>
Bass, Black Sea	<i>Centropristis striata</i>	Otoliths (Scales historically)	Whole
Bass, Striped	<i>Morone saxatilis</i>	Otoliths	<i>Not currently aged</i>
Bluefish	<i>Pomatomus saltatrix</i>	Otoliths	Baked & thin sectioned
Butterfish	<i>Peprilus triacanthus</i>	Otoliths	Whole
Cod, Atlantic	<i>Gadus morhua</i>	Otoliths	Baked & thin sectioned
Cusk	<i>Brosme brosme</i>	Otoliths	<i>Not currently aged</i>
Flounder, Fourspot	<i>Paralichthys oblongus</i>	Otoliths	<i>Not currently aged</i>
Flounder, Summer	<i>Paralichthys dentatus</i>	Otoliths (Scales historically)	Thin sectioned, some whole
Flounder, Windowpane	<i>Scophthalmus aquosus</i>	Otoliths (Scales historically)	Whole, some halved
Flounder, Winter	<i>Pseudopleuronectes americanus</i>	Otoliths (Scales historically)	Baked & thin sectioned
Flounder, Witch	<i>Glyptocephalus cynoglossus</i>	Otoliths	Thin sectioned

<b>Species</b>	<b>Latin name</b>	<b>Structure</b>	<b>Preparation Method</b>
Flounder, Yellowtail	<i>Limanda ferruginea</i>	Otoliths (Scales historically)	Whole
Haddock	<i>Melanogrammus aeglefinus</i>	Otoliths (Scales historically)	Thin sectioned
Hake, Offshore	<i>Merluccius albidus</i>	Otoliths	<i>Not currently aged</i>
Hake, Red	<i>Urophycis chuss</i>	Otoliths	Thin sectioned
Hake, Silver	<i>Merluccius bilinearis</i>	Otoliths	Thin sectioned
Hake, Spotted	<i>Urophycis regia</i>	Otoliths	<i>Not currently aged</i>
Hake, White	<i>Urophycis tenuis</i>	Otoliths	Thin sectioned
Halibut, Atlantic	<i>Hippoglossus hippoglossus</i>	Otoliths	<i>Not currently aged</i>
Herring, Atlantic	<i>Clupea harengus</i>	Otoliths	Embedded whole
Mackerel, Atlantic	<i>Scomber scombrus</i>	Otoliths	Embedded whole
Plaice, American	<i>Hippoglossoides platessoides</i>	Otoliths	Thin sectioned
Pollock	<i>Pollachius virens</i>	Otoliths	Thin sectioned
Pout, Ocean	<i>Zoarces americanus</i>	Otoliths	<i>Not currently aged</i>

<b>Species</b>	<b>Latin name</b>	<b>Structure</b>	<b>Preparation Method</b>
Redfish, Acadian	<i>Sebastes fasciatus</i>	Otoliths	Thin sectioned, some halved
Scallop, Sea	<i>Placopecten magellanicus</i>	Whole shell	<i>Not currently aged</i>
Scup	<i>Stenotomus chrysops</i>	Otoliths (Scales historically)	Thin sectioned
Surfclam, Atlantic	<i>Spisula solidissima</i>	Chondrophore	Thin sectioned
Tilefish	<i>Lopholatilus chamaeleonticeps</i>	Otoliths	Thin sectioned
Wolffish, Atlantic	<i>Anarhichas lupus</i>	Otoliths	<i>Not currently aged</i>

**Otolith:** the 'earbone' of a fish; a calcium carbonate structure located inside the skull.

**Chondrophore:** the spoon-shaped hinge of a surfclam.