

AFSC/ABL: Juvenile rockfish DNA species identification

Theme keywords: Biota, 002

Abstract: Many pelagic juvenile rockfish (Sebastes) were collected in juvenile salmonid surveys in the Gulf of Alaska (GOA) from 1998 to 2002. Often species identification of rockfish is difficult or impossible at this stage of development (20 to 40 mm), and the juveniles of only a few species indigenous to Alaska waters have been described. These collections are samples of the first large aggregations observed in GOA waters and provided an opportunity to document the occurrence of several species of rockfish. Using mtDNA markers developed to identify rockfish species, we were able to identify unequivocally four species (Sebastes alutus, S. aleutianus, S. borealis, S. reedi) from subsamples of the collections. Other individuals were assigned to groups of two or three species. Using morphological data alone, we identified S. borealis, S. crameri, and S. reedi. The other species were initially indistinguishable by their morphology from S. alutus. The combined genetic and morphological data successfully resolved the other species as S. entomelas and probably S. ciliatus/variabilis, although S. polyspinis cannot be ruled out. In addition to documenting the presence of these species in the GOA, the results provide useful information for identifying pelagic juvenile rockfishes in surveys targeting this early life history stage.

FGDC, ESRI, and Biological Profile Metadata:

- [Identification Information](#)
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- [Metadata Reference Information](#)

Metadata elements shown with **blue** text are defined in the Federal Geographic Data Committee's (FGDC) [Content Standard for Digital Geospatial Metadata \(CSDGM\)](#). Elements shown with **green** text are defined in the [ESRI Profile of the CSDGM](#). Elements shown with **brown** text are defined in the [NBII Biological Profile of the CSDGM](#). Elements shown with a green asterisk (*) will be automatically updated by ArcCatalog. ArcCatalog adds hints indicating which FGDC elements are mandatory; these are shown with gray text.

Identification Information:

Citation:

Citation information:

Originators: Chris Kondzela, AFSC

Title:

AFSC/ABL: Juvenile rockfish DNA species identification

Publication date: 2007

Geospatial data presentation form: maps and data

Other citation details:

Kondzela, C. M., A. W. Kendall Jr., Z. Li, D. M. Clausen, and A. J. Gharrett. 2007. Preliminary identification of pelagic juvenile rockfishes collected in the Gulf of Alaska. In *Biology, assessment, and management of north Pacific rockfishes*, J. Heifetz, J. DiCosimo, A. J. Gharrett, M. S. Love, V. M. O'Connell, and R. D. Stanley (eds.), p. 153–166. Univ. Alaska Sea Grant, AK-SG-07-01, Fairbanks. Kendall, Arthur W., Jr., Christine Kondzela, Zhuozhuo Li, David Clausen, and Anthony J. Gharrett. 2007. Genetic and morphological identification of pelagic juvenile rockfish collected from the Gulf of Alaska. NOAA Professional Paper NMFS 9. 26 p.

Description:

Abstract:

Many pelagic juvenile rockfish (*Sebastes*) were collected in juvenile salmonid surveys in the Gulf of Alaska (GOA) from 1998 to 2002. Often species identification of rockfish is difficult or impossible at this stage of development (20 to 40 mm), and the juveniles of only a few species indigenous to Alaska waters have been described. These collections are samples of the first large aggregations observed in GOA waters and provided an opportunity to document the occurrence of several species of rockfish. Using mtDNA markers developed to identify rockfish species, we were able to identify unequivocally four species (*Sebastes alutus*, *S. aleutianus*, *S. borealis*, *S. reedi*) from subsamples of the collections. Other individuals were assigned to groups of two or three species. Using morphological data alone, we identified *S. borealis*, *S. crameri*, and *S. reedi*. The other species were initially indistinguishable by their morphology from *S. alutus*. The combined genetic and morphological data successfully resolved the other species as *S. entomelas* and probably *S. ciliatus/variabilis*, although *S. polyspinis* cannot be ruled out. In addition to documenting the presence of these species in the GOA, the results provide useful information for identifying pelagic juvenile rockfishes in surveys targeting this early life history stage.

Purpose:

This dataset contains the data used to identify juvenile rockfish species using DNA markers.

Time period of content:

Time period information:

Range of dates/times:

Beginning date: 1998

Ending date: 2002

Currentness reference:

ground condition

Status:

Progress: Complete

Maintenance and update frequency: None planned

Spatial domain:

Description of geographic extent:

Gulf of Alaska

Bounding coordinates:

West bounding coordinate: -151.2

East bounding coordinate: -135.7

North bounding coordinate: 58.5

South bounding coordinate: 55.8

Keywords:

Theme:

Theme keywords: Biota, 002

Theme keyword thesaurus: ISO 19115 Topic Categories

Place:

Place keywords: Alaska, Gulf of Alaska

Place keyword thesaurus: Geographic Names Information System

Taxonomy:

Keywords/taxon:

Taxonomic keywords: collection, multiple species, vertebrates

Taxonomic keyword thesaurus:None

Taxonomic classification:

Taxon rank name: Empire

Taxon rank value: Biovitae

Applicable common names: Carbon-based lifeforms

Taxonomic classification:

Taxon rank name: Kingdom

Taxon rank value: Animalia

Taxonomic classification:

Taxon rank name: Phylum

Taxon rank value: Chordata

Taxonomic classification:

Taxon rank name: Subphylum

Taxon rank value: Vertebrata

Taxonomic classification:

Taxon rank name: Superclass

Taxon rank value: Osteichthyes

Taxonomic classification:

Taxon rank name: Class

Taxon rank value: Actinopterygii

Taxonomic classification:

Taxon rank name: Subclass

Taxon rank value: Neopterygii

Taxonomic classification:

Taxon rank name: Infraclass

Taxon rank value: Teleostei

Taxonomic classification:

Taxon rank name: Superorder

Taxon rank value: Acanthopterygii

Taxonomic classification:

Taxon rank name: Order

Taxon rank value: Scorpaeniformes

Taxonomic classification:

Taxon rank name: Suborder

Taxon rank value: Scorpaenoidei

Taxonomic classification:

Taxon rank name: Family

Taxon rank value: Scorpaenidae

Taxonomic classification:

Taxon rank name: Genus

Taxon rank value: Sebastes

Taxonomic classification:

Taxon rank name: Species

Taxon rank value: [Sebastes aleutianus](#)

Applicable common names:
[rougheye rockfish](#)

Taxonomic classification:

Taxon rank name: [Species](#)

Taxon rank value: [Sebastes alutus](#)

Applicable common names: [Pacific ocean perch](#)

Taxonomic classification:

Taxon rank name: [Species](#)

Taxon rank value: [Sebastes borealis](#)

Applicable common names:
[shortraker rockfish](#)

Taxonomic classification:

Taxon rank name: [Species](#)

Taxon rank value: [Sebastes ciliatus](#)

Applicable common names: [dark rockfish](#)

Taxonomic classification:

Taxon rank name: [Species](#)

Taxon rank value: [Sebastes crameri](#)

Applicable common names:
[darkblotched rockfish](#)

Taxonomic classification:

Taxon rank name: [Species](#)

Taxon rank value: [Sebastes entomelas](#)

Applicable common names: [widow rockfish](#)

Taxonomic classification:

Taxon rank name: [Species](#)

Taxon rank value: [Sebastes polyspinis](#)

Applicable common names: [northern rockfish](#)

Taxonomic classification:**Taxon rank name:** Species**Taxon rank value:** Sebastes reedi**Applicable common names:**

yellowmouth rockfish

Taxonomic classification:**Taxon rank name:** Species**Taxon rank value:** Sebastes variabilis**Applicable common names:** dusky
rockfish

Access constraints: There are no legal restrictions on access to the data. They reside in public domain and can be freely distributed.

Use constraints:

User must read and fully comprehend the metadata prior to use. Data should not be used beyond the limits of the source scale. Acknowledgement of NOAA, as the source from which these data were obtained, in any publications and/or other representations of these data is suggested.

Point of contact:**Contact information:****Contact person primary:****Contact person:** Chris Kondzela**Contact organization:** National Oceanic and Atmospheric Administration (NOAA) Alaska Fisheries Science Center (AFSC) Auke Bay Laboratories (ABL)**Contact address:****Address type:** mailing and physical**Address:**

17109 Point Lena Loop Road

City: Juneau**State or province:** AK**Postal code:** 99801**Country:** USA**Contact voice telephone:** 907-789-6000**Contact facsimile telephone:** 907-789-6094**Contact electronic mail address:** chris.kondzela@noaa.gov

Contact instructions:

The e-mail address directs you to the person most knowledgeable about this data. If an alternative contact person becomes necessary, use the voice phone number for referral.

Data set credit:

Funding provided by GLOBEC

Native data set environment:

Microsoft Excel Spreadsheet

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Data Quality Information:**Logical consistency report:**

No logical consistency test were run.

Completeness report:

None

Lineage:**Process step:****Process description:**

No process steps have been described for this data set

Process date: Unknown

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Distribution Information:**Distributor:****Contact information:****Contact person primary:**

Contact person: Chris Kondzela

Contact organization: National Oceanic and Atmospheric Administration (NOAA) Alaska Fisheries Science Center (AFSC) Auke Bay Laboratories (ABL)

Contact address:**Address type:** mailing and physical**Address:**

17109 Point Lena Loop Road

City: Juneau**State or province:** AK**Postal code:** 99801**Country:** USA**Contact voice telephone:** 907-789-6000**Contact facsimile telephone:** 907-789-6094**Contact electronic mail address:** chris.kondzela@noaa.gov**Contact instructions:**

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Distribution liability:

The user is responsible for the results of any application of this data for other than its intended purpose.

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Metadata Reference Information:**Metadata date:** 20081208**Metadata review date:** 20100122**Metadata contact:****Contact information:****Contact person primary:****Contact person:** Emily Fergusson**Contact organization:** National Oceanic and Atmospheric Administration (NOAA) Alaska Fisheries Science Center (AFSC) Auke Bay Laboratories (ABL)**Contact position:** Metadata coordinator**Contact address:****Address type:** mailing and physical

Address:

17109 Point Lena Loop Road

City: Juneau

State or province: AK

Postal code: 99801

Country: USA

Contact voice telephone: Use e-mail to contact the metadata coordinator.

Contact facsimile telephone: 907-789-6094

Contact electronic mail address: AFSC.metadata@noaa.gov

Metadata standard name: FGDC Biological Data Profile of the Content Standard for Digital Geospatial Metadata

Metadata standard version: FGDC-STD-001.1-1999

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