

Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:

AFSC/RACE/GAP/Nichol: Archival tag depth and temperature data from snow crab

1.2. Summary description of the data:

Seasonal migration of commercial-size (=102 mm carapace width [CW]), morphometrically mature (MM) snow crabs (*Chionoecetes opilio*) from the eastern Bering Sea was examined in relation to the summer distribution of mature females to identify spatiotemporal overlap of males and females and determine the likelihood of mating associations for specific reproductive stages. Depth variation associated with this migration was examined to determine whether seasonal migrations contribute to previously recognized spatial differences in distributions of commercial-size males caught in the winter fishery and in the National Marine Fisheries Service summer bottom trawl survey. Depth data from 33 data storage tags attached to commercial-size MM males during 2010 and 2011 indicated that most males moved inshore during spring—a movement that would allow them to mate with multiparous females but not with pubescent-primiparous females. Smaller tagged males (100–102 mm CW) underwent more extensive inshore migrations, and several of them traveled more than 100 km in one direction. Both tagging and distribution data indicated that most commercial-size MM males remained predominantly on the outer shelf throughout the year (despite some inshore movements during spring) and, therefore, these males did not contribute greatly to the spatial differences observed between winter and summer.

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2010 to 2012

1.5. Actual or planned geographic coverage of the data:

W: -174, E: -172, N: 59, S: 57

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Table (digital)

1.7. Data collection method(s):

(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:

2.5. Phone number:

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

Dan Nichol

3.2. Title:

Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

No

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

Unknown

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Lineage Statement:

Methodology: A total of 277 morphometrically mature male snow crabs (96–134 mm CW) were tagged and released with pressure-and-temperature-recording DSTs on 18–22 April 2010 (n=120) and 7–8 March 2011 (n=157), near the end of each fishing season to ensure that tagged crabs were not recaptured until the following year. Tagging operations occurred on the winter snow crab fishing grounds northwest of the Pribilof Islands at approximately 57°35' N in 2010 and about 100 km farther north at 58°30' N in 2011 (Fig. 1). DSTs were attached to spaghetti tags that were wrapped around the carapace of the crabs between the first and second walking legs. Because male snow crabs do not molt after they reach maturity, the effect of tagging on their behavior and mortality was assumed to be negligible. In April 2010, an additional 221 snow crabs were tagged and released with numbered spaghetti tags without a DST attached as a control to test whether the additional DST attachment affected capture rate, as well as to help examine site fidelity. Crabs were captured and tagged aboard commercial pot fishing vessels *Kiska Sea* (in 2010) and *Pacific Sun* (in 2011) during normal commercial fishing operations, and they were released within 10 min of capture at the same location. All tagged male crabs were large-clawed with new to slightly worn hard shells, conditions that predominated in the catches during tagging. Only crabs that possessed all their limbs were selected for tagging. Tagged crabs were recaptured by commercial crab pot vessels during the following winter and spring snow crab fisheries in 2011 and 2012, and a tag reward program was implemented to provide an incentive to return tags. Tag recapture locations were provided by the fishermen who returned tags. The DSTs, Cefas G5 Long Life tags with 2 MB of memory (Cefas Technology Limited, Lowestoft, UK), measured depth (pressure) at 1-min intervals, with an accuracy of ± 2 m and precision of < 0.08 m, and temperature at 30-min intervals, with an accuracy of $\pm 0.1^\circ\text{C}$ and precision of 0.03°C . DSTs were bullet-shaped with dimensions of 8×31 mm and weighed 1g in water.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

unknown

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:

- 1.7. Data collection method(s)
- 2.1. Point of Contact Name
- 2.4. Point of Contact Email

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:**6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/28008>

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive:

https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

No

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

No

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

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

7.2. Name of organization of facility providing data access:

Alaska Fisheries Science Center (AFSC)

7.2.1. If data hosting service is needed, please indicate:

yes

7.2.2. URL of data access service, if known:

https://console.cloud.google.com/storage/browser/_details/nmfs_odp_afsc/RACE/GAP/2010-2012%20A

7.3. Data access methods or services offered:

e-mail PI

7.4. Approximate delay between data collection and dissemination:

unknown

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

n/a

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

NCEI_MD

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):

Alaska Fisheries Science Center - Seattle, WA

8.3. Approximate delay between data collection and submission to an archive facility:

unknown

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

"IT Security and Contingency Plan for the system establishes procedures and applies to the functions, operations, and resources necessary to recover and restore data as hosted in the Western Regional Support Center in Seattle, Washington, following a disruption."

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.