FICHE META\_INFORMATION\_PARAMETRES

(à remplir par le responsable du paramètre)

####

### Nom du DATASET / Data SET NAME

*Green Edge Satellite observation: Baffin Bay region*

### PROJET-ETUDE / *PROJECT TITLE*

*Campaign NAME* : Satellite Observation *LEG : Not Applicable*

*Date* *begin : January 2003*

*Date end : December 2015 (2015 in process of completion)*

*Chief Scientist*: Emmanuel Devred

*Address :*

Université Laval

UMI Takuvik

1045 avenue de la médecine

Québec, QC, G1V0A6, Canada

### OPERATION *(if Relevant)*

*Sampling method : MODIS ocean color sensor*

*Station number-Cast number : Not Applicable*

*Operation code :Not Applicable*

### **RESPONSABLE SCIENTIFIQUE du paramètre / *PI of the parameter***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Nom /*name* | adresse / *address* | téléphone / *phone number* | fax /*fax number* | adresse mél /*email address* |
| **Emmanuel Devred** | Takuvik |  |  | Emmanuel.devred@takuvik.ulaval.ca |
| **Maxime Benoît-Gané** | **Takuvik** | **418 656 2131 ext 7677** | **418 656 2339** | Maxime.benoit-gagne@takuvik.ulaval.ca |

### DATASET contact

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Nom /*name* | adresse / *address* | téléphone / *phone number* | fax /*fax number* | adresse mél /*email address* |
| **Maxime Benoît-Gané** | **Takuvik** | **418 656 2131 ext 7677** | **418 656 2339** | Maxime.benoit-gagne@takuvik.ulaval.ca |
|  |  |  |  |  |

### INFORMATION GEOGRAPHIQUES */ GEOGRAPHIC INFORMATION*

*Predefined site (if relevant): Entire Baffin Bay*

*Location:*

*LATITUDE: from 60 to 80oN*

*LONGITUDE: from -80 to -50oE*

### DESCRIPTION DES INSTRUMENTS / INSTRUMENTS DESCRIPTION *(if Relevant)*

*Instrument Type: Not Applicable*

*Manufacturer: Not Applicable*

*Model: Not Applicable*

*Instrument Features / Calibration: Not Applicable*

### DESCRIPTION DES PARAMETRES */ PARAMETERS DESCRIPTION*

# Ce qui a été collecté, mesuré et comment / *How was the parameter collected and measured (include references for analytical methods)?*

*Sampling:*

*Satellite observations consist of 5-day composite images (jpeg and netcdf format) of primary production, chlorophyll-a concentration (OC3 algorithm from MODIS), Sea-ice concentration (SSMIS sensor) and Sea-surface temperature (MODIS product).*

The origin of the inputs and the versions of the Takuvik code used to produce the images on <http://www.obs-vlfr.fr/proof/php/GREENEDGE/greenedge_satellites.php> are detailed in Table 1.

Table 1. Inputs and versions of the Takuvik code used to produce the images on http://www.obs-vlfr.fr/proof/php/GREENEDGE/greenedge\_satellites.php.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Time period** | **2003 to 2014.** | **1 January 2015 to 29 June 2015.** | **30 June 2015 to 31 December 2015.** | **1 January 2016 to 6 October 2016.** |
| **Rrs** | R2013.1. | R2013.1. | R2014.0. | R2014.0. |
| **Ice** | v1 of Cavalieri 1996. | Maslanik 1999. | v1.1 of Cavalieri 1996. | Maslanik 1999. |
| **Takuvik code** | PPv0.34.0.0. | PPv0.34.0.0. | PPv0.35.3.2. | PPv0.35.3.2. |

R2013.1: MODIS-Aqua Reprocessing 2013.1. See <https://oceancolor.gsfc.nasa.gov/reprocessing/r2013.1/aqua/>.

R2014.0: MODIS-Aqua Ocean Color Reprocessing 2014.0. See <https://oceancolor.gsfc.nasa.gov/reprocessing/r2014/aqua/>.

v1 of Cavalieri 1996: Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS Passive Microwave Data, Version 1. See <http://nsidc.org/data/NSIDC-0051/versions/1>.

Maslanik 1999: Near-Real-Time DMSP SSMIS Daily Polar Gridded Sea Ice Concentrations, Version 1. See <http://nsidc.org/data/NSIDC-0081/versions/1>.

v1.1 of Cavalieri 1996: Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS Passive Microwave Data, Version 1. See <http://nsidc.org/data/NSIDC-0051/versions/1>. See Table 16. Processing History for information about the differences between versions 1 and 1.1.

PPv0.34.0.0: Code for primary productivity at Takuvik version 0.34.0.0. See appendix for more information.

PPv0.35.3.2: Code for primary productivity at Takuvik version 0.35.2.2. See appendix more information.

*Analytical procedure : (briefly, could be a short recall to a published reference):*

*Units: PP: mgC m-2 d-1; Chl: mg Chla m-3; Sea-ice concentration: %; SST: oC*

*Sensor Precision:*

# Décrire quels types de données sont nécessaires pour vous compléter votre propre jeu de données **avant** envoi à la base de données, et estimer le délai avant la disponibilité de vos données pour la base de données / *Post-cruise data analysis/treatment required, and the time frame for this*

*Estimated Date of Delivery :* Not Applicable

### REFERENCES BIBLIOGRAPHIQUES

**PP :** Bélanger, S., M. Babin, and J.-E. Tremblay (2013) Increasing cloudiness in Arctic damps the increase in phytoplankton primary production due to sea ice receding, Biogeosciences, 10,  4087-4101.

**Chl:** O'Reilley J.E., Maritorena S., O'Brien M.C., Siegel D.A., Toole D., Menzies D., Smith R.C., Mueller J.L., Mitchell B.G., Kahru M., Chavez R.P., Strutton P., Cota G.F., Hooker S.B., McClain C.R., Carder K.L., Mueller-Karger F., Harding L., Magnusion A., Phynney D., Moore G.F., Aiken J., Arrigo K.R., Letelier R., Culver M. In: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3. Hooker S.B., Firestone E.R., editors. Vol. 11. NASA/TM-2000-2206892. NASA Goddard Space Flight Center; Greenbelt, MD: 2000.

**Sea-ice Concentration:** Cavalieri, D. J., C. L. Parkinson, P. Gloersen, and H. J. Zwally. 1996, updated yearly. *Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS Passive Microwave Data, Version 1*. [indicate subset used]. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. <http://dx.doi.org/10.5067/8GQ8LZQVL0VL>.

**SST:** Brown, O.B., and P.J. Minnett, 1999, MODIS Infrared Sea Surface Temperature Algorithm Theoretical Basis Document, Ver 2.0, <http://modis.gsfc.nasa.gov/data/atbd/atbd_mod25.pdf>

### APPENDIX

# History of PPv0

The differences between versions 34\_0\_0, 34\_2\_0, 35\_0\_0, 35\_3\_2 and 36\_0\_0 are the following.

In 34\_0\_0:

These data were lost during the crash of a Network-Attached Storage (NAS). There was a dependency of thetas on CF. This dependency was removed for ulterior versions. The reprocessing R2013.1 was used for MODIS-Aqua input files. The reprocessing R2010.0 was used for SeaWiFS input files. Sea ice concentration data from Cavalieri 1996 was used for 1998 to 2014. See <http://nsidc.org/data/NSIDC-0051/versions/1>. Sea ice concentration data from Maslanik 1999 was used for 2015. See <http://nsidc.org/data/NSIDC-0081/versions/1>.

In 34\_2\_0:

The temporal coverage is 1 January 1998 to 31 December 2014. The reprocessing R2013.1 was used for MODIS-Aqua input files. The reprocessing R2010.0 was used for SeaWiFS input files. Sea ice concentration data from Cavalieri 1996 was used. See <http://nsidc.org/data/NSIDC-0051/versions/1>.

In 35\_0\_0:

The temporal coverage is 1 January 2015 to 31 March 2016. The reprocessing R2014.0 was used for both MODIS-Aqua and SeaWiFS input files. Nsst, pic and pic\_l2\_flags were removed from this version to help data management. Nsst is now available in /Volumes/output-prod/Takuvik/Teledetection/Products/Nsst/0\_0\_1\_0. pic is now available in /Volumes/output-prod/Takuvik/Teledetection/Products/pic/0\_0\_1\_0. Sea ice concentration data from Maslanik 1999 was used. See <http://nsidc.org/data/NSIDC-0081/versions/1>.

In 35\_3\_2:

The temporal coverage is 1 January 1998 to 6 October 2016. The reprocessing R2014.0 was used for both MODIS-Aqua and SeaWiFS input files. New a\_w and b\_bw values were used. Sea ice concentration data from Cavalieri 1996 was used for 2002 to 2015. See <http://nsidc.org/data/NSIDC-0051/versions/1>. Sea ice concentration data from Maslanik 1999 was used for 2016. See <http://nsidc.org/data/NSIDC-0081/versions/1>. There is a minor bug in the computation of variables PP, PP\_cota, PP\_gsm\_mustapha and PP\_oc.

In 36\_0\_0:

The temporal coverage is 1 January 1998 to 6 October 2016. The reprocessing R2014.0 was used for both MODIS-Aqua and SeaWiFS input files. Sea ice concentration data from Cavalieri 1996 was used for 2002 to 2015. See <http://nsidc.org/data/NSIDC-0051/versions/1>. Sea ice concentration data from Maslanik 1999 was used for 2016. See <http://nsidc.org/data/NSIDC-0081/versions/1>. A minor bug in the computation of variables PP, PP\_cota, PP\_gsm\_mustapha and PP\_oc was corrected. The effect of the bug was small (r^2 of 1.000 between the log values of each version). This bug was absent of versions preceding 35\_3\_2. It means that there is no bug in version 34\_2\_0 or 35\_0\_0.

The changes between the different versions don’t seem to produce big differences. See the images of the same day (13 August 2006) produced with each version on my Dropbox (<https://goo.gl/S5XwsM>): AM2006225\_PP\_v0.34.0.0.jpg, AM2006225\_PP\_v0.34.2.0.jpg, AM2006225\_PP\_v0.35.0.0.jpg AM2006225\_PP\_v0.35.3.2.jpg and AM2006225\_PP\_v0.36.0.0.jpg. See a plot of version 36\_0\_0 versus version 35\_3\_2 in 0\_36\_0\_0\_vs\_0\_35\_3\_2.jpg.