



Welcome to SOCAT

A Collection of Underway Ocean CO₂ Observations Quality Controlled by the
Science Community



SOCAT Data Products:

[Cruise Data Viewer](#)

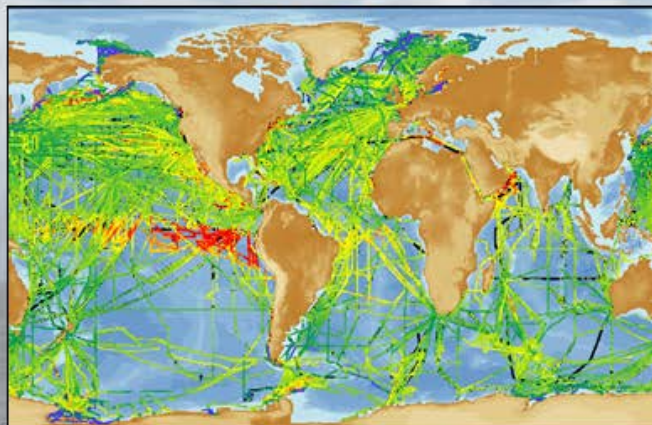
[Gridded Data Viewer](#)

[Table of Cruises](#)

[Data Download](#)

[Publications/Presentations](#)

[SOCAT Credits](#)



SOCAT Documentation:

[About](#)

[News](#)

[Meetings](#)

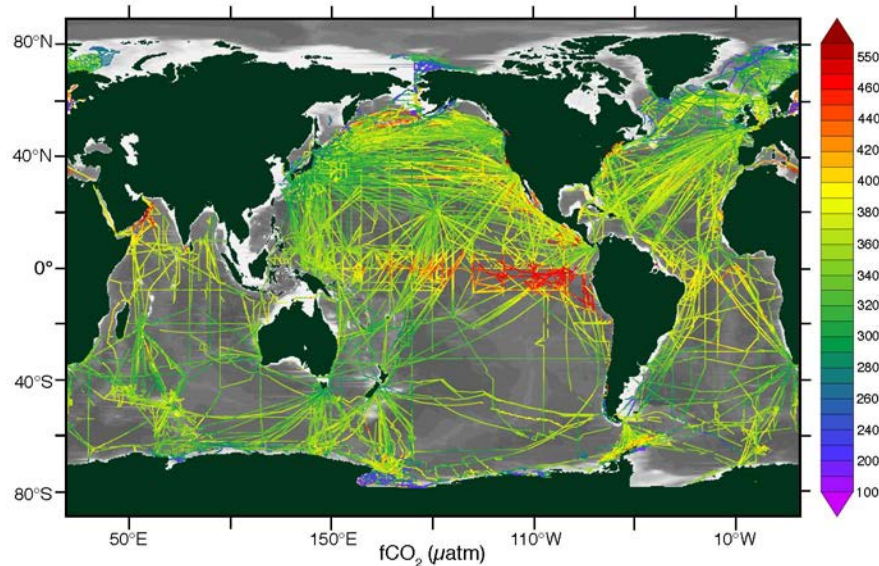
[Data Use Policy](#)

SOCAT Help:

[Videos](#)

[Frequently Asked Questions](#)

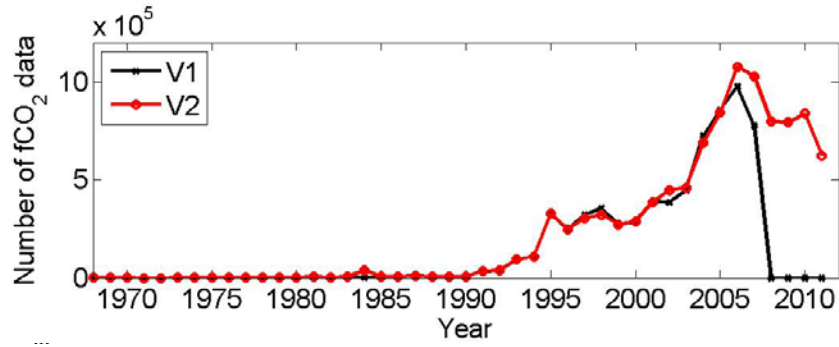
Please contact submit@socat.info to report problems.



- Surface ocean fCO₂ in uniform format with quality control;
- Version 1: 6.3 million fCO₂, 1851 cruises, 1968 to 2007 (09/2011);
- Version 2: 10.1 million fCO₂, 2660 cruises, 1968 to 2011 (**June 2013**);
- Regular updates for the global oceans and coastal seas;
- Transparent, fully documented;
- Synthesis product, gridded products, interactive LAS viewers;

V1: Bakker et al. Eos 93(12), 2012; Sabine et al. ESSD in press; Pfeil et al. ESSD accepted; V2: Bakker et al. ESSD in preparation.

Regular releases



- Submit data & metadata to CDIAC in IOCCP recommended formats (<http://cdiac.ornl.gov/oceans/submit.html>);
- Internal release of version 2 in March 2013;
- Release of version 2 on 4 June 2013 at ICDC9;
- Prototype for SOCAT automation in version 3 by May 2013;
- Consultation on the inclusion of alternative sensors for v3;
- >100 contributors and data providers;
- Multiple funding sources, but no long-term funding;
- Please, **acknowledge** SOCAT, data providers and contributors.



Coastal ('09, Kiel)



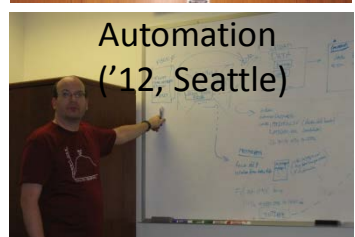
Atlantic & Southern ('09, Norwich)



Southern & Indian ('10, Hobart)



Version 1 ('11, Paris, IMBER IP)



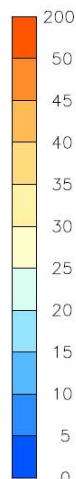
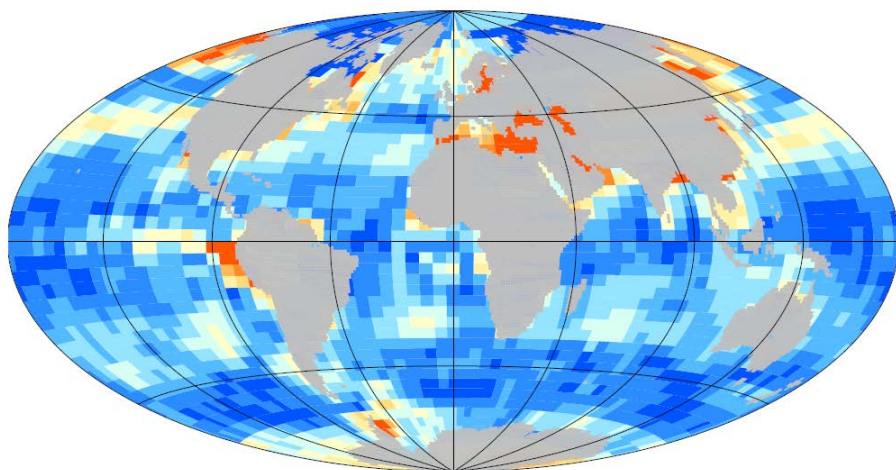
Automation ('12, Seattle)



Leads ('12, Tsukuba)

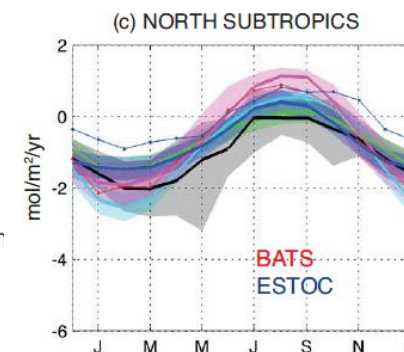
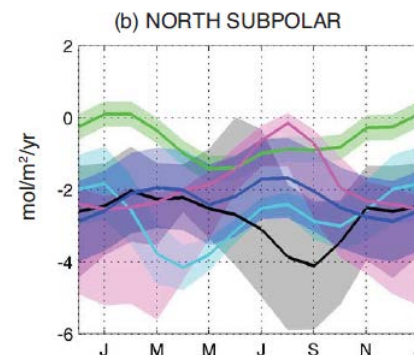


Coastal & Arctic ('12, Seattle)



pCO₂ climatology
 Atmospheric inversion
 Ocean models
 SOCAT MPR
 pCO₂ data base

Amplitude seasonal pCO_{2w} cycle (µatm)
(Rödenbeck et al., 2013, OS)



Seasonal Atlantic CO₂ air-sea fluxes
(Schuster et al., 2013, Biogeosciences)

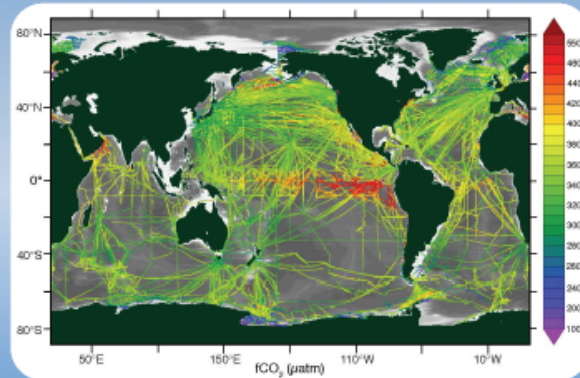
- Process studies;
- Ocean carbon sink and its seasonal, year-to-year, decadal variation;
- Initialisation and validation of ocean carbon cycle models.
- Widely used (≥4 publications, ≥2 submitted, ≥2 in preparation).

Surface Ocean CO₂ Atlas (SOCAT): Release of Version 2 and Science Highlights

*Side Event at the
9th International Carbon Dioxide Conference, Beijing
Tuesday 4 June 2013, 12:15-13:30*

The Surface Ocean CO₂ Atlas (SOCAT) and the International Ocean Carbon Coordination Project (IOCCP) invite attendants of the 9th International Carbon Dioxide Conference (ICDC9) to a lunch-time side event on 4 June 2013. SOCAT is an effort by the international marine carbon research community. It aims to improve access to surface water CO₂ data by regular releases of quality controlled synthesis and gridded fCO₂ (fugacity of carbon dioxide, similar to partial pressure) data products for the global oceans and coastal seas. SOCAT version 1 has been made public in September 2011 and contains 6.3 million surface water fCO₂ data from 1851 cruises between 1968 and 2007.

Surface water fCO₂ from 1968 to 2007 in SOCAT version 1.5



Organising committee

Dorothee Bakker (UEA, UK)
Wei-Jun Cai (U.Delaware USA)
Steven Hankin (NOAA-PMEL, USA)
Alex Kozyr (CDIAC, USA)
Jeremy Mathis (NOAA-PMEL, USA)
Are Olsen (UiB, Norway)
Benjamin Pfeil (UiB / BCCR, Norway)
Maciej Telszewski (IOCCP, Poland)

Version 2, which extends the data set to December 2011, will be made public during the side event. The session will host short (5 minute) science talks on SOCAT applications. [Abstracts for these science talks](#) (maximum 300 words) should be submitted by 15 March 2013 via email (d.bakker@uea.ac.uk). These abstracts are **independent** from abstract submissions for the main conference. The organising committee will select 3 to 5 presentations on the basis of relevance for SOCAT and scientific quality. Please also inform us about any SOCAT-relevant oral or poster presentation accepted for the main conference. We will advertise such presentations during the side event.

Invitation to version 2 release

Questions?
Feedback?
Internal release?
Abstract?

Dorothee Bakker
d.bakker@uea.ac.uk