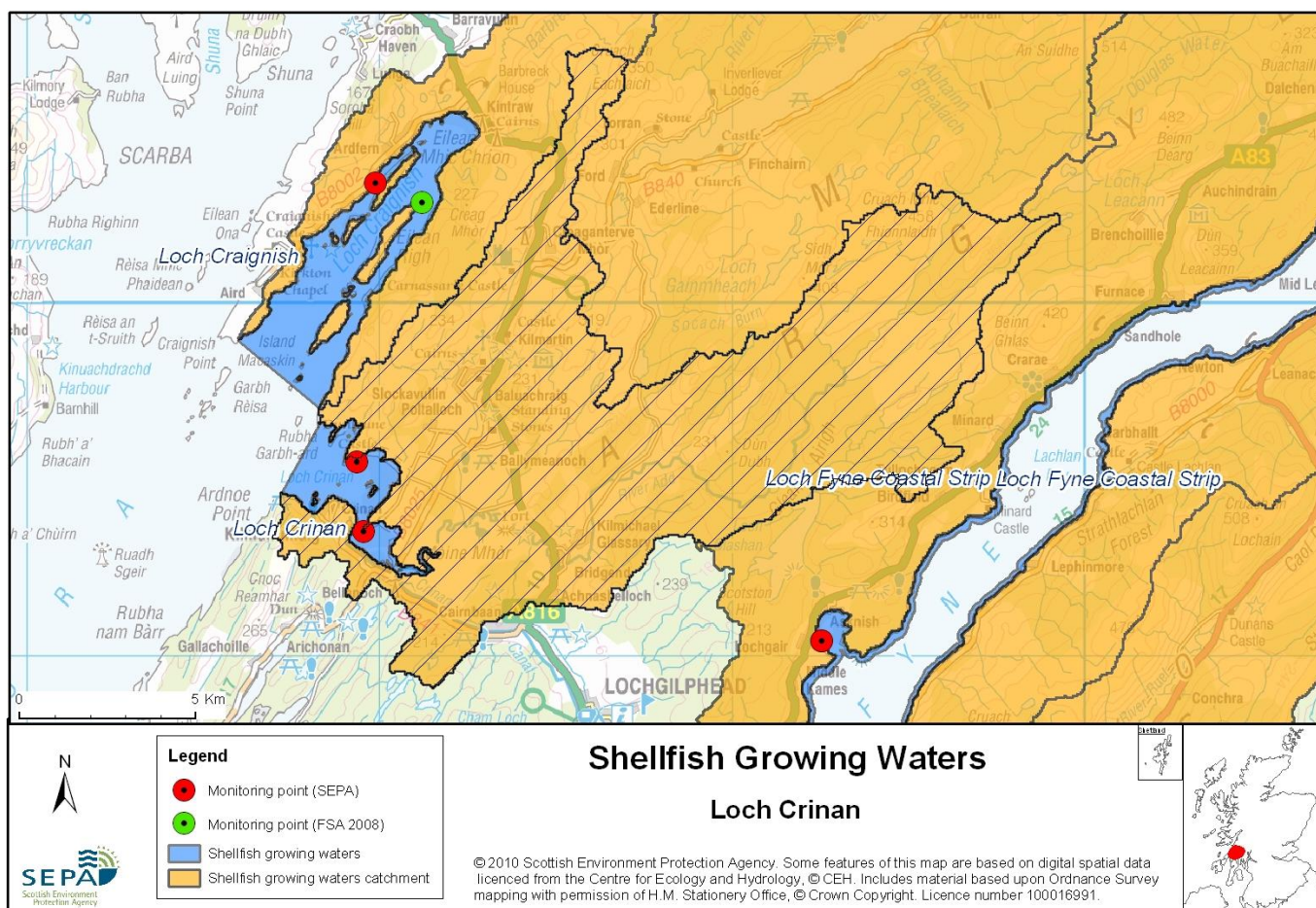


116 Loch Crinan



Name	Loch Crinan
Report Reference Number	116
WFD Code	UKS79923116
Local Information	Area bounded by a line drawn between NR7828596541 (Scodaig) and NR7723594639 (Ardnoe Point), extending to MHS
Designated Area (km ²)	6.33
Year of Designation	2000
Sampling Points	Loch Crinan at Crinan Ferry - NR 79570 93535 Loch Crinan at Duntrune Castle Mussel Site - NR 79379 95506
Commencement of Monitoring	2000

Formally site 33, designation was modified in 2005

116.1 Commercial Shellfish Interests

Loch Crinan is not designated as a Shellfish Harvesting Area by the Food Standards Agency (FSA) and therefore has no associated classification.

For more information on Food Standards Agency Classification please visit:

<http://www.food.gov.uk/scotland/safetyhygienescot/shellmonitorscot/shellclassesscot/>

116.2 Bathymetric Information

Loch Crinan has a total length of approximately 3 km. There are no sills and the loch forms an open bay with a westerly aspect and so is exposed to prevailing winds. Maximum water depth is approximately 16 m. There are no morphological pressures on the loch.

116.3 Conservation Designations

North of Loch Crinan is Loch Craignish designated Shellfish Waters ([UKS7992365](#)), a small part of which is also designated as a Shellfish Harvesting Area by the Food Standards Agency.

National Nature Reserve (NNR) – [Moine Mhor](#)

Designated 22/10/1987

Special Area of Conservation (SAC) – [Moine Mhor](#)

Designated 17/03/2005 for internationally important species (Otter (*Lutra lutra*), Marsh fritillary butterfly (*Euphydryas (Eurodryas, Hypodryas aurinia)*) and habitat (Active raised bog, Atlantic salt meadows, Degraded raised bog, Intertidal mudflats and sandflats, Western acidic oak woodland)

This is also a **Water Dependent SAC** and a **Groundwater Dependent SAC**

Special Area of Conservation (SAC) – [Taynish and Knapdale Woods](#)

Designated 17/03/2005 for internationally important species (Otter (*Lutra lutra*), Marsh fritillary butterfly (*Euphydryas (Eurodryas, Hypodryas aurinia)*) and habitat (Western acidic oak woodland, Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels)

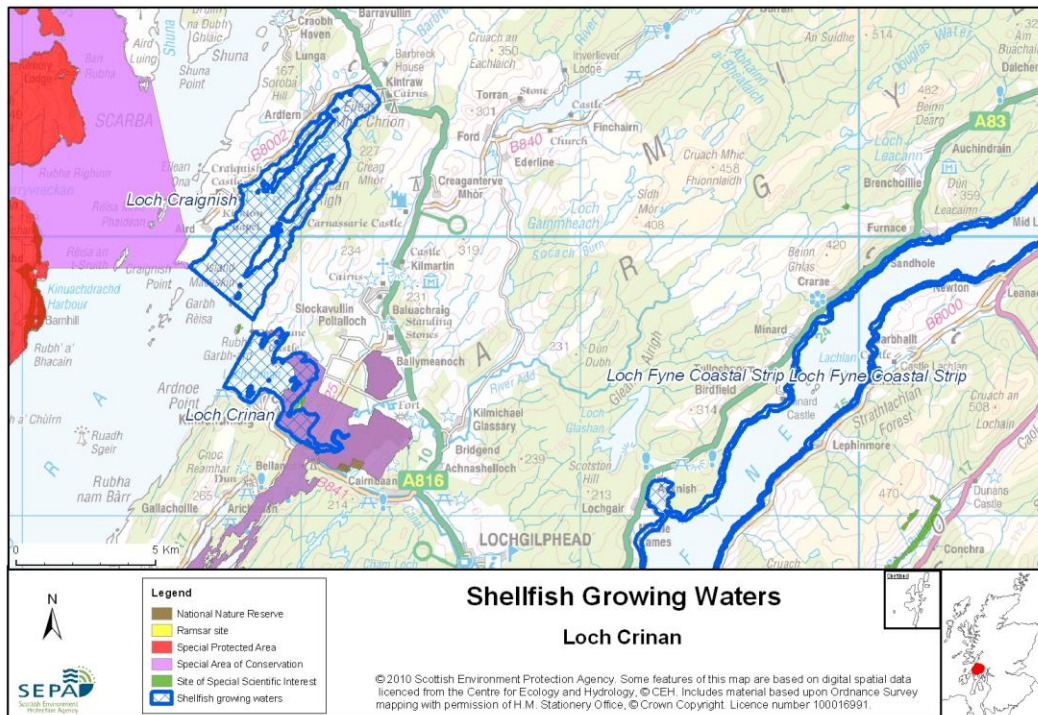
This is also a **Water Dependent SAC** and a **Groundwater Dependent SAC**

Sites of Special Scientific Interest (SSSI) – [Moine Mhor](#)

Designated 14/12/1990 for assemblages of breeding birds, Marsh fritillary (*Euphydryas aurinia*) and habitat (Estuarine raised bog, Saltmarsh, Upland oak woodland)

Sites of Special Scientific Interest (SSSI) – [Knapdale Woods](#)

Designated 25/04/2001 for Breeding bird assemblage, Bryophyte assemblage, Dragonfly assemblage, Lichen assemblage, Loch trophic range, Upland oak woodland.



116.4 Topography and Land Use – Potential Diffuse Pollution Sources

Loch Crinan lies at the mouth of the River Add and the Crinan Canal, both excellent quality freshwater inputs. The lower river catchment supports some livestock agriculture but the main land use is coniferous forestry. It is a sparsely populated catchment.

The most likely reason for guideline faecal coliform failures (see 116.7 Compliance History below) is diffuse source pollution from either Livestock farming and/or sewage disposal. If this shellfish water continues to fail it may be necessary to carry out bacterial source tracking studies to verify the origin of the diffuse pollution.

116.5 Point Source Discharge

Loch Crinan has a sparsely populated catchment and many of the properties discharge treated sewage through privately maintained septic tanks, generally to soakaways. There is one small consented discharge from a Scottish Water sewage treatment works.

There are no marine cage fish farm within the designated shellfish water.

Type	Name	Treatment	Consent No.	NGR	PE	Additional Information
Scottish Water Asset	Crinan STW	Secondary	-	-	67	To be installed by 2005/06 as part of Q&S II
Other	Crinan Hotel & canal housing	Septic Tank	-	-	<200	
	Crinan	-	CD7445	-	<200	
Industrial	Boatyard	-	-	-	-	

116.6 Compliance Monitoring Regime

The following monitoring regime of the designated area was implemented in July 2005.

Year	Monitoring Regime
2005 -	<ul style="list-style-type: none"> • Quarterly for Sal, DO, pH, temperature, visible oil at site NR 795 956 • Annually for metals and organohalogens in mussels at site NR 795 956 • Twice yearly for metals in water • Quarterly for faecal coliforms in mussels at site NR 795 956

116.7 Compliance History

UKS79923116 - Loch Crinan				
	Compliance history for Waters and Biota, excluding faecal coliforms data			Compliance history for faecal coliforms
Year	Overall Result	Imperative	Guideline	Guideline
2000	Pass	Fail ¹	Fail ²⁻⁵	Fail
2001	Fail	Fail ^{6,7}	Fail ^{8,9,10}	Pass
2002	Pass	Pass	Fail ¹¹⁻¹³	Pass
2003	Pass	Pass	Fail ^{14,15}	Fail
2004	Pass	Pass	Fail ¹⁶	Fail
2005	Pass	Pass	Fail ^{17,18}	Fail
2006	Pass	Pass	Pass	Fail
2007	Pass	Pass	Pass	Fail
2008	Pass	Pass	Pass	No Data
2009	Pass	Pass	Pass	Fail
2010	Pass	Pass	Pass	Fail

^{1,6} Failures relate to single results of 18.6 µg/l Zn and 13.3 µg/l Zn taken in water at Duntrune Castle in 2000 and 2001 respectively. These exceed the Imperative standard of 10 µg/l. These results were from one of two batches of water sampled in each year.

⁷ Failure relates to a result of 6.9 for pH which fails the Imperative standard of 7-9 taken at Duntrune Castle in June 2001. This result may have been due to heavy rainfall or increased fresh water input to the Loch at the time.

^{8,14} Failures relate to low salinity results for a samples of water taken at Duntrune Castle in November 2001 (8.8‰) and January 2003 (7.72 ‰) which fail the Guideline standard of 12-38 ‰.

^{2-5,9-13} Failures relate to low results for salinity in water taken at Crinan Ferry in 2000, 2001 and 2002 which fail the Guideline standard of 12-38 ‰. There were several failures in all years at this site however the yearly average for salinity readings were 14.1‰ for 2000, 19.6‰ for 2001 and 21.3‰ for 2002 which all pass for the Guideline standard.

¹⁵⁻¹⁸ Failures relate to low results for salinity in water taken at Crinan Ferry in 2003, 2004 and 2005 which fail the Guideline Standard of 12-38 ‰. There was a single failure in 2003 (1.02 ‰) but several failures in 2004 and 2005 ranging between 0.45 and 10.12 ‰. The results are likely due to fresh water input near the sampling site.

The waters have mainly failed to comply with the Guideline standard for faecal coliforms with passes only in 2001 and 2002. They continued to fail to achieve the Guideline standard in 2009 and 2010, there was no data available in 2008.

116.8 Future Monitoring

Biannual sampling is continuing for metals and organochlorines in waters along with monthly sampling for T, Sal, DO and pH at Crinan Ferry and Duntrune. Mussels will be sampled annually for organohalogens and metals at Duntrune Castle. This site will also be monitored quarterly for faecal coliforms in mussels and in addition, collection of mussels for TBT and PAH analysis will begin in 2004 as part of a SEPA Environmental Improvement Plan (previously called Action Plans).

In the event of any sample failing any chemical EQS, the site will be revisited and resampled for the failed parameter. Samplers are asked to identify any evidence of visible harm to the shellfish population at the site.

Faecal coliform data is collected by SEPA from many of the shellfish waters to comply with Guideline Standards ($\leq 300/100\text{ml}$ of shellfish flesh and intervalvular fluid). However many shellfish sites are also by FSA, which can often be more frequent. When this occurs FSA data ($\leq 230 E.coli/100\text{g}$ flesh) can be used to infer pass/fail of Guideline Standards for faecal coliforms.

116.9 Improvement Actions

There are currently no improvement actions planned for this designated Shellfish Water.

WFD Objectives

Under the Water Framework Directive, the target objectives expect this shellfish water to Pass by 2015 (first River Basin Management Plan Cycle) for Imperative Shellfish Growing Water Standards, with high confidence. The Guideline Shellfish Growing Water Standards are also predicted to pass by 2015 but with low confidence.

Objective	First Cycle 2015	Confidence	Second Cycle 2021	Confidence	Third Cycle 2027	Confidence
Imperative Shellfish Growing Waters Standard	Pass by 2015	High	Pass by 2021	High	Pass by 2027	High
Guideline Shellfish Growing Waters Standard	Pass by 2015	Low	Pass by 2021	Low	Pass by 2027	Low

116.10 Summary of Actions

Action	Deadline
No improvement actions required	N/A