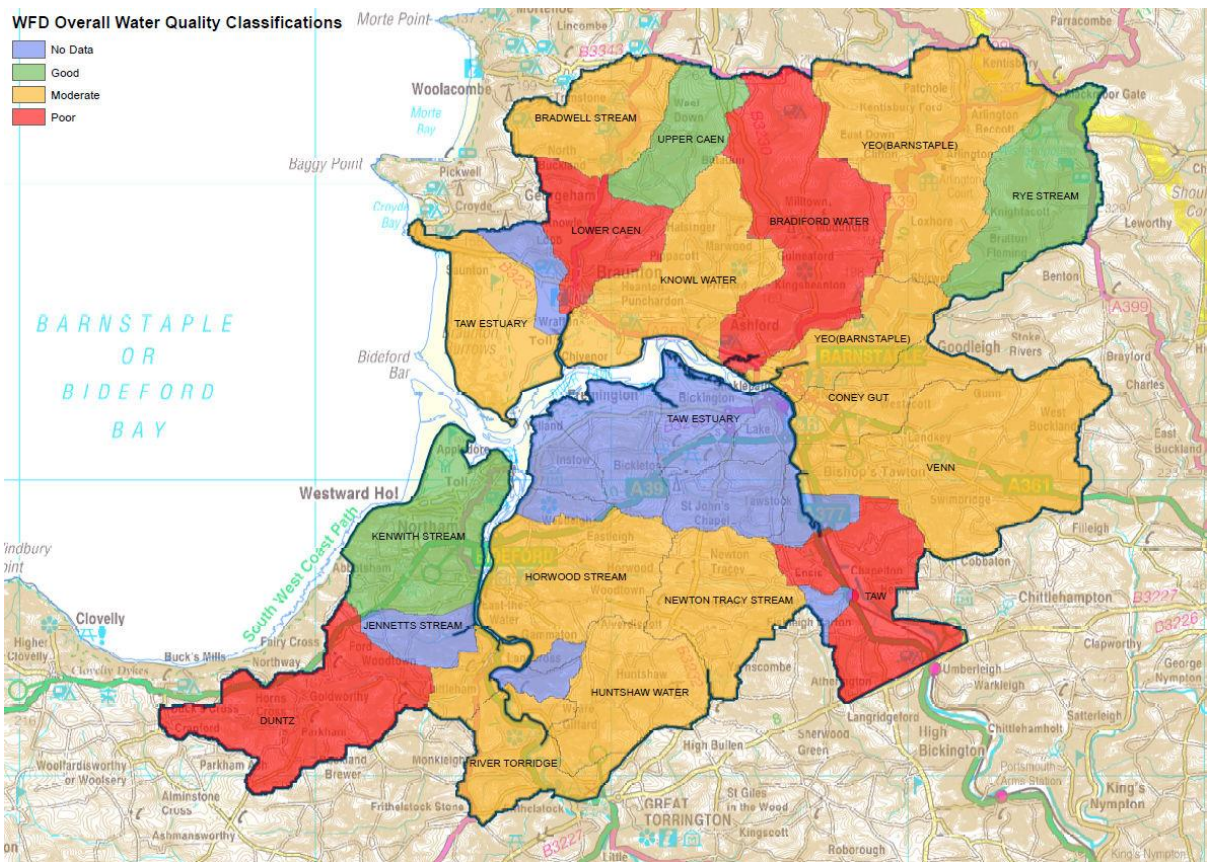


North Devon Priority Focus Area

Case Study v5
28/09/2022



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1. Introduction

Evidence indicates that agriculture has a major influence on the quality of rivers from a combination of poor management of slurry, nutrient rich runoff and fertiliser application. Sometimes this is a direct result of non-compliant and poor infrastructure. The Environment Agency has identified a number of project areas where a limited, expert resource concentrated on agriculture could result in a disproportionate improvement in WFD Status. The River Axe in East Devon and the North Devon Priority Focus Area (NDPFA) were identified and funding has been obtained for prolonged projects in both areas.

The NDPFA covers an area of around 200km² to the north of the Taw Estuary and is comprised of the River Caen, Bradiford Water and River Yeo (Barnstaple) catchments, all of which discharge into the Taw Torridge Estuary. The Bradiford Water, Lower River Caen and Lower River Yeo were assessed under the WFD as in Poor condition and the rest of the area as Moderate. This has an impact on the quality of the Taw Torridge Estuary and poses a significant risk to the Bathing Waters in the area.

The Taw Torridge Estuary is a transitional water body that has protected status for Shellfish Waters, is a Bass Nursery, migratory water for salmonids, eels, elvers and shad, affects Bathing Waters, is a SSSI, the focus point of the Taw Estuary Nitrate Vulnerable Zone (NVZ), in an Area of Outstanding Natural Beauty and in a UNESCO Biosphere Reserve. The estuary waters are failing due to high levels of dissolved inorganic nitrogen, macrophytes and faecal indicators in both the Shellfish Waters and the de-designated bathing beach at Instow. Analysis of faecal indicators found that the majority are derived from diffuse pollution from livestock practices. The surrounding catchments are predominantly intensive dairy.

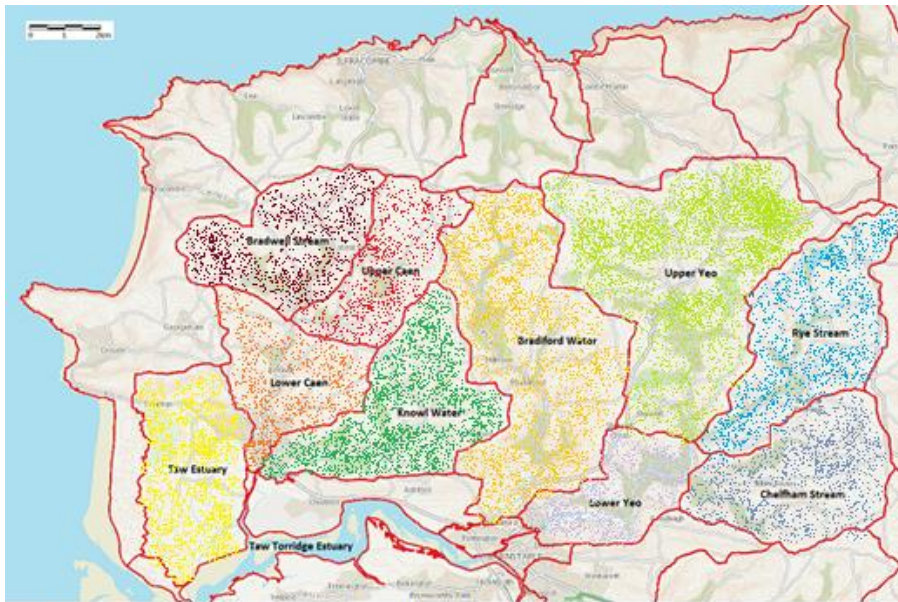
Estuarine waters discharge into Bideford Bay and can effect Bathing Waters from Westward Ho! to the south, through to Saunton Sands, Croyde, Putsborough and Woolacombe beaches to the north. Many of the popular activities carried out in the estuary and surrounding waters such as paddling, swimming, kayaking, SUPing, sailing, water skiing, jet skiing, fishing, windsurfing and kite surfing involve immersion or prolonged contact with the water. Water sports were estimated in 2010 to be worth £58M per annum to the local economy. Tourism in North Devon (including Torridge District) is estimated to be worth £560M per year and employs around 11,100 locally (source: Northern Devon Tourism Strategy 2018-2022).

The Taw catchment exhibits a range of ecological problems associated with:

- High phosphate concentrations
- Sediment pollution
- Algal (phytobenthos) communities smothering the riverbed and aquatic plants
- Silted river gravels, loss of salmonid spawning and juvenile river habitats
- Loss of important aquatic plant communities
- Higher and more flashy river flows
- Eroded riverbanks
- Higher river temperatures
- Loss of bankside trees and habitats

- Invasive plants such Himalayan Balsam colonising river corridors

The catchment has been in a Catchment Sensitive Farming (CSF) Strategic Partnership since 2009 and projects involving Natural England (NE), the North Devon Biosphere (NDB), Westcountry Rivers Trust (WRT), Devon Wildlife Trust (DWT) and others have been active in providing advice and capital grants to reduce phosphates, nitrates and sediment getting into the streams and rivers of the catchment. NE's Catchment Sensitive Farming initiative is currently focussing on the Lower Taw and North Devon Streams.



Map of the River Caen, Bradford Water and River Yeo catchments

In 1991, salmon net licenses on the estuary were restricted to 36 later in the '90s this was reduced to only 14. In 2002, the riparian owners clubbed together and brought 11 of those licences, leaving just 3 remaining. In spite of this, salmonid stocks continued to decline.

South West Water Limited (SWW) has invested to reduce

the nitrate discharge from the major works discharging to the estuary serving Barnstaple and the surrounding area. However, the catchment continues to fail its water quality targets and it is postulated that this is mainly due to nutrient enrichment from dairy farming.

2. The Environment Agency farm campaign

The project funded one Environment Officer working on targeted farm inspections between 2016 and 2020. The Environment Officer had developed agricultural expertise and was able to understand and communicate the financial benefits of meeting compliance. As part of the project, the officer developed spreadsheets to calculate NVZ compliance, slurry production, financial benefits of slurry as a fertiliser, approximate costs of infrastructure and the costs of spreading rainwater. The officer also identified that most farmers, agents and consultants were not calculating the working volumes of earth bank slurry lagoons correctly. -The officer also developed a spreadsheet to calculate the total volume and the approximate costs of the working volume and freeboard. This has been widely circulated and extracts have been included on the AHDB (Agriculture and Horticulture Development Board) Slurry Wizard. This work helps to demonstrate to farmers the financial savings of effective slurry and manure management which are substantial over a period of years.

In the NDPFA, farm inspections were carried out on all livestock farms with around 100 cattle or more (based on 2014 CLAD data), where incidents were reported during the project period or when farming practices were reported to us as being a risk to

watercourses. The figures quoted include 24 farm visits undertaken by the officer adjacent to the project area but still mostly within the NVZ.

The visits concentrated on assessing infrastructure compliance, clean and dirty water separation, identifying sources of pollution, advising farmers on the legislation they need to comply with and lastly, indicating the regulations they were currently failing to comply with.

The visits have mainly been advisory but with the regulatory message that legislation must be complied with. They have focused on helping farmer understand the issues on the farm that are affecting the environment and to provide guidance where helpful. Where grants were available, farmers have been referred to partners like EN, CSF, DWT and North Devon Biosphere. Our agreement is required for some grants and stewardship schemes, and partners have sometimes referred farmers to us. In exceptional cases, where advice and guidance have not instigated improvements, a more regulatory approach has been taken.

There are approximately 131 cattle farming units in the catchments. These farms include dairy and beef. Land use includes improved grassland for grazing and forage, with some arable crops including maize, fodder beet, winter and spring cereals. The cattle units are split into numbers as follows (based on 2014 figures):

Cattle numbers	No of holdings
LT60	54
60-100	8
100-200	31
200-500	30
500-1000	5
GT1000	3

The visits were generally unannounced and involved inspecting silage, slurry, fuel and pesticide stores in accordance with the regulations, yards, guttering, rainfall areas, watercourses to check for polluting discharges, assessing risks, and raising awareness of SSAFO, NVZ and FRfW. Some visits were carried out jointly with our partners, especially Natural England’s CSF officers and DWT. The work followed standard

Environment Agency compliance assessment procedures. Farmers were advised of actions required, efficiencies, land management, Farming Rules for Water (FRfW), offences and costs. Some farms were referred to partners such as Natural England CSF, Devon Wildlife Trust, Westcountry Rivers Trust and the North Devon Biosphere where their grants and help was deemed to be appropriate. Follow up visits have been carried out to the significant polluting and high-risk farms. Enforcement has rarely been required although one farm was issued with an anti-pollution works notice and a SSAFO reg 7notice after negotiations failed. This is the subject of ongoing enforcement action. 3 farms were referred to the RPA.

As part of the project, the Environment Officer also carried out presentations to farming groups and joint presentations with Natural England, the North Devon Biosphere, Westcountry Rivers Trust and Devon Wildlife Trusts.



Algae and blood worms due to silage/ slurry

Illegal burning of waste

3. Farming Issues

The farming sector, along with water companies, is the biggest cause of Cat 1 and 2 pollution incidents of all the industrial sectors. This may be because the dairy sector has been encouraged to restructure over the last 20 years driven by low milk prices, with farms under intense commercial pressure to increase herd sizes. This has led to larger herds, increased milk production, large loans and a drive to reduce costs in order for farms to remain viable. SSAFO regulations require that any significantly modified silage or slurry store is constructed in accordance with the regulations but allows exemptions for structures constructed before 1991. This exemption allows a perception that not enlarging stores and failing to keep them structurally sound is acceptable. Even though there is a requirement for 5 months slurry storage in the area due to the NVZ regulations, we have often found that herd sizes have increased significantly without silage and slurry storage reflecting the increasing requirements. Where infrastructure has been improved, this has often been carried out without consultation with the Environment Agency or Planning Authorities, and without reference to the guidance, leading to “DIY” lagoons where the dimensions are often not recorded and as a result are neither sized nor constructed appropriately. Inappropriately sized, poorly constructed, non-compliant structures often cause pollution by overflowing or catastrophic failure. Undersized stores necessitate spreading throughout the closed period and during winter when there is little to no agricultural benefit and the risk of diffuse pollution is high. When slurry stores have catastrophic failures, as well as risks to the environment, there is a real risk of injury or death from the physical failure of the structure or drowning.

The dairy sector has high potential to release sediment, nitrate and phosphorus to rivers. In wet conditions, soils are susceptible to mobilisation if cover crops have not been established and vulnerable to compaction from heavy machinery. Much of the land in the area contains fine soils including clays, is steeply sloping and is unsuitable for arable crops. It is also unsuitable for growing maize and fodder crops as this often results in fields being harvested as late as December to February and remaining without cover crops for up to 8 months of the year. The whole area is in an NVZ and so has closed periods for fertiliser and slurry spreading. However, winter spreading is widespread, mainly due to inadequate storage and will often occur when soils are saturated.

Over the last 15 years, regulation has been minimal due to reductions in Grant In Aid Funding (GIA) for this kind of work, resulting in significant reductions in frontline regulatory staff. From 2016, a KPI of 0.5% of farms being visited per year was adopted. On this basis, farmers would be able to confidently expect that they would not get an inspection in their lifetime, or maybe 5 or 6 generations of their offspring and they are

aware of this. This may have led to complacency about regulations and a general reluctance to engage with the Environment Agency. The officer was subjected to hostility, aggression, and threats of physical violence at the start of the project, but there has been a marked change in attitude and some farmers will now contact the officer for advice.

There has also been a reliance on commercial inspection schemes such as Red Tractor and supermarkets and an expectation that farming businesses would prioritise investment on compliance with regulations.

Regulatory non compliance	No of farms
Total number of farms visited	101
NVZ non-compliant	64
EPR pollution occurring at time of first visit	66
Slurry store - non-compliant construction	62
Slurry store - non-compliant volume	60
Silage stores – non-compliant construction	58
Fuel store – non-compliant structure	24
NVZ/ SSAFO non-compliant and/or causing pollution	87%

Regulatory non-compliance in and around project area



New non-compliant earth bank store

Concrete ramp/floor lined earth banked lagoon

Of particular concern was the widespread lack of compliance with SSAFO and/or NVZ slurry storage requirements. SSAFO regulations date back to 1991 and from 2012, under NVZ regs in the project area, there has been a requirement for 5 months slurry storage. In spite of this, the majority of farms complied with neither in terms of construction standards or volume. It appeared widespread and regular practice to construct non-compliant earth bank stores without planning permission, calculating the volume properly, constructing in accordance with SSAFO regs or CIRIA 759 guidance (available for free), nor recording the dimensions of the structures. Considering the cost of these stores, this is surprising and indicates a complacency towards environmental regulations and planning law, something that would not be so prevalent in other regulated industries.



Overflowing slurry lagoon



Spreading on compacted maize stubble

Non-compliance with SSAFO, NVZ and EPR regulations were ubiquitous with nearly 9 in 10 farms either being non-compliant, causing pollution or both. Most farmers had either never received a visit by Environment Agency staff, or that visit was undertaken so long ago they do not remember what it was about. Some had only been visited due to pollution reports when the officers tend to concentrate on stopping the pollution and remediation, rather than assessment of infrastructure and root cause analysis.

Most of the inspection effort was concentrated on inspecting farm buildings, yards, slurry, silage and fuel storage, and watercourses in the vicinity of these areas. The officer was generally accompanied by the farmer or a representative.



Poorly established cover crop runoff



Field heaps on compacted maize field

Where breaches of FRfW were noticed, these have been pointed out to the farmer. A lack of knowledge of FRfW was almost universal. In addition, September 2019 through to February 2020 has been exceptionally wet and has highlighted widespread breaches of the regulations due to poor land management practices, leading to extensive soil and sediment runoff from poorly managed fields.

Many farms in the catchment have received capital grants funded by Environmental Stewardship, with most of the farms visited in Stewardship Schemes but still breaching environmental regulations.



Bradiford Water maize field runoff



Field causing sediment pollution

Later harvesting maize varieties provide better yields but are highly risky in terms of land use. Drilling may not occur until late spring this can have knock-on effects later in the year, especially if the autumn is wet. Wet conditions prevent the crop from ripening and may delay harvesting operations, often into November or December. Even when the harvest is completed in September or October, the maize fields might not be re-seeded in time to establish a cover crop. Wet conditions make soils heavy, difficult to work, and vulnerable to compaction during harvest. Farmers are often harvesting when the fields are waterlogged, the land is then too wet to plough or re-seed and fields are left rutted, compacted and prone to soil being washed off during rain, causing pollution and hazardous driving conditions.

Stubble is often used as sacrificial land for winter slurry spreading, providing no agricultural benefit and in breach of Farming Rules for Water. Stubble is often already compacted from harvesting operations and is compacted further by heavy slurry tankers. Even moderate amounts of rainfall can result in polluting runoff containing high levels of nutrients and sediment flowing into watercourses.

Nearly every farm visited was Red Tractor Assured.



Slurry spreading due to lack of infrastructure, wet conditions and likely to cause pollution

4. Referrals to RPA

Only 2 farms were referred to the RPA (Rural Payments Agency) for failing to comply with NVZ Rules, SMR1 (Statutory Management Requirements). The referral process was convoluted, and feedback was not received from the RPA as to the outcome of the referrals.

Meetings with local RPA inspectors and Environment Officers took place with both parties expressing frustration with the referral process, this has been raised nationally. In addition, failure to comply with SSAFO, EPR or FRfW are not specifically covered by an SMR and do not result in a financial penalty unless prosecuted.

5. Partnership working and grants

Year	No. of 1:1 CSF advisory visits (CSFR04)
2019	184
2018	109
2017	168
2016	58
2015	136
2014	75
2013	143
2012	25
2011	18
TOTAL VISITS:	916

Our partners were key in delivering the farm campaign project with the vast majority of targeted farms visited being referred for further advice, guidance and grant aid if within the target areas.

The catchment sensitive farming initiative has been active in the North Devon area with data recorded since 2011. There are 945 CSF high priority farms across both the Taw and Torridge catchments. Of these, 436 farms have now received at least one CSF advisory visit. The total number of one-to-one CSF advisory visits delivered is currently at around

916 suggesting the majority of these engaged farms having had between 2-3 advisory visits each.

This leaves 54% of the priority holdings where there has been no CSF engagement to date. However, 150 farms have had their first engagement with CSF from 2018 onwards which demonstrates coverage to these farms is rapidly improving. A combination of improved CSF staff resourcing and increased regulatory pressure has no doubt assisted with this uplift.

Value of Capital Items RP15 and RP28 in CS agreements created each year in North Devon 2016 to 2020 (March 2020)		
Agreement Start Year	Option	Option Value
2016	RP15 - Concrete yard renewal	£46,300.84
	RP28 - Roofing (sprayer washdown area, manure storage area)	£69,254.00
	Total	£115,554.84
2017	RP15 - Concrete yard renewal	£227,677.46
	RP28 - Roofing (sprayer washdown area, manure storage area)	£740,032.00
	Total	£967,709.46
2018	RP15 - Concrete yard renewal	£371,600.88
	RP28 - Roofing (sprayer washdown area, manure storage area)	£606,732.00
	Total	£978,332.88
2019	RP15 - Concrete yard renewal	£403,816.06
	RP28 - Roofing (sprayer washdown area, manure storage area)	£836,008.00
	Total	£1,239,824.06
2020	RP15 - Concrete yard renewal	£256,907.24
	RP28 - Roofing (sprayer washdown area, manure storage area)	£249,798.00
	Total (NB: Incomplete, not all agreements live at time of writing)	£506,705.24

Using concrete yard renewal and roofing as a barometer for wider yard infrastructure investment, £1.4m of CSF grant aid was invested through the old CSF capital grant scheme across the Tav since 2011. Since 2016 a further £2.3m has been awarded in Countryside Stewardship Scheme agreements. It is noted not all these agreements will improve slurry storage and spreading, Phase 4 of the catchment sensitive farming initiative is funded until March 2021.

Between 2015 and 2020 as part of the SWW funded Upstream Thinking project DWT has worked with 41 farm holdings in the Barnstaple Yeo catchment. This has involved a total of 120 one to one farm visits and £40,179 claimed in Upstream Thinking grants made to 13 different landowners in the catchment. A total of 18 Countryside Stewardship agreements prepared or supported by DWT Advisory work are live in the catchment providing annual options payments of £352,715.85 and capital works of £634,392.53 with a combined capital and options value of £1,258,991

NDB FAEPP have visited 30 farm holdings and provided approximately £144,190 in grants and aid resulting in a reduction of FIO's and other pollutants such as sediment from entering local watercourses, to support and improve Taw and Torridge estuarine shellfish populations.

NDB The Focus Area Project		
Year	Holdings	Grant in aid
2017 - 2018	10	£ 38,500.00
2018 - 2019	11	£ 59,837.13
2019 - 2020	9	£ 45,853.94

Grant aid is not targeted directly at storage facilities, so whilst projects such as concreting yards, roofing and new sheds can help by reducing the amount of rainwater that needs storage, it does not resolve the fundamental issues related to inadequate slurry and silage liquor storage. This unfortunately can only be resolved via investment from the farmer, and it appears to require a strong regulatory reminder that this infrastructure is not optional.

Close working relationships between field-based staff has been crucial to the success of the project. In many cases joint visits were arranged with the partners and farmer to ensure that resource was directed to meet compliance as a priority. Partners have been able to integrate their activities with the EA, targeting holdings that they might not have prioritised, with the EA highlighting regulatory requirements.

There has been a significant increase in investment in infrastructure such as slurry lagoons, silage silos, concreting yards and roofing since 2016. Evidence would suggest that the increased presence of both Environment Agency and partner staff has led to a better awareness of regulations and grants. This in turn has prompted significant infrastructure projects on a number of farms, many grant aided.

6. Discussion

The most productive period for visits is limited to the wetter months between November and February, when cattle are housed. Pollution from open yards, feed areas, tracks and poor storage can be very obvious in these months, something that would not be noticeable during summer months when cattle are field based. This can lead to nutrient, bacterial and solid pollution which can often be easily detected due to algal and blood worm growth. Being able to show farmers the visible effect of pollution is a powerful tool and helps them to understand why they need to be compliant with the regulations, especially in the worst cases where enforcement action could be taken.

Most farmers were aware of the requirement for 4- or 5-months slurry storage but often admitted to taking a business risk of not investing in infrastructure because there was little regulatory presence in the catchment and the lack of direct pay back. Instead, they have been investing in increasing herd numbers, housing and improving milking systems (robotic milkers are part funded), which puts more pressure on existing undersized and poorly engineered infrastructure.

The majority of dairy farming units inspected employ the services of business advisors, agronomists and/ or nutritionists, to ensure that high yielding dairy cows are fed an appropriate diet. On some farms, advice from nutritionists is promoting the use of maize as an aid to increase milk production. Agronomists are often seeking to meet the expectations of farmers to grow the required crops without considering the suitability of the land. A trend of poor advice from consultants on slurry storage and land

management requirements is leading farmers into an unsustainable business model driven by the false economics of herd expansion without including the capital costs of slurry and silage infrastructure, the ongoing maintenance of these structures and the costs of servicing the loans that inevitably are necessary for this sort of expansion.

Nearly all of the 62 farms that were non-compliant with SSAFO/ NVZ agreed to modify their structures to comply with SSAFO/ NVZ regulations. However, of the 13 that have made improvements to increase the volume of their storage, 4 have carried out the work without complying with the CIRIA guidance. 59 of the farms visited had non-compliant silage silos, 13 have improved their silos or reverted to bagged silage to comply with SSAFO regs. Of the 66 farms causing pollution, we have only managed to confirm that 14 have stopped their polluting discharges, mainly because we have been unable to carry out follow up visits and the farmers have not proactively updated us. Many farmers have an inherent mistrust of regulators and this manifests in a reluctance to keep us and other regulating authorities updated about developments, even when they are positive. There is also a strong belief that the Environment Agency does not have enough officers to re-inspect and enforce the regulations. To an extent this is right as we are having to prioritise visits based on environmental impact.

2 dairy units are likely to cease dairy farming due to the infrastructure investment required not being in their long-term best interests. Both farmers were past retirement age and neither had family who were interested in taking over an operating livestock farm, they would be unlikely to benefit from the investment in their lifetimes. It is likely that they will revert to a smaller number of dry bedded beef cattle as more than anything else, farming is their lifestyle.

On some farms, where compacted maize stubble had been identified as causing runoff through the winter, the farmers have been advised that they are both causing pollution and are breaching the FRfW. Generally, the response is that the fields are too wet to treat. In one case, even though the field causing pollution was too wet to treat, the farmer then chose to harvest fodder beet from the adjacent fields, which resulted in soil runoff during rain. This demonstrates that economic drivers will often preclude environmental protection and potentially the lack of understanding of the detriment to the farmer's own land when soil is lost. This is exacerbated by poor management in some cases and lack of business planning.

Following all regulatory visits, letters or emails itemising all identified non-compliances were sent to farmers requiring improvement works to an agreed or suggested timescale. Failure to comply without good reason will leave the Environment Agency no alternative but to serve notices to cease pollution or to install infrastructure in accordance with the regulations. Failure to comply with a notice usually results in prosecution. However as this has been made clear by the officers visiting, the vast majority of farmers chose to comply without formal enforcement. Formal enforcement was necessary on only one farm where the farmer had repeatedly failed to comply with the regulations, in spite of the help offered by Natural England, Upstream Thinking and the Farm Community Network. The notice was served as a last resort due to the farm continuing to cause significant pollution events over a prolonged period and failing to follow any of the advice or guidance provided by our partners, mainly due to poor infrastructure.

7. Conclusion

The long-term aim is to improve the WFD designations of the River Caen, River Yeo and Bradiford Water, ultimately improving the ecological quality of the Taw Estuary SSSI and shellfish beds. This requires a significant reduction in nutrient and sediment loading to watercourses within the catchment. A concerted effort is needed by all partners including advice, targeted financial aid and regulation.

This project has shown that despite significant amount of advice and grant aid in the last 10-15 years, there remains a perceived lack of risk associated with failure to comply with the most basic regulations such as NVZ, SSAFO and EPR regulations. Significant herd increases have not been accompanied by increases in slurry and silage storage to comply with the regulations, and compliance is not taken seriously by the farming community.

Increasing slurry storage in accordance with NVZ and SSAFO will reduce the need for farmers to spread in the NVZ closed period or in the winter, thus reducing compaction, wastage of nutrients and diffuse pollution.

Further education and work is required to effectively implement the new Farming Rules for Water and in particular those relating to soil management, which is not understood, even by some advisors.

8. Cost Benefit Analysis

Without Grant in Aid to fund officers on the ground funding was secured through the North Devon Catchment Co-ordinator from a variety of sources. However, project funding for agricultural regulation is neither justifiable nor sustainable.

The project has resulted in significant investment in agriculture through the priority area and there has also been a trickle effect into the surrounding area. The majority has been from the farming businesses themselves, as follows:

Investment since 2016				
Slurry stores	Silage silos	Other investment	Grant aid	Total
£1,052,000	£825,500	£3,849,626	£3,952,317	£9,679,443

From the table above the total investment in farming in the area a proportion of which was a result of the regulatory presence throughout the life of the project is around £9,679,443 versus the cost of having an environment officer assigned to the project, which costs around £120,000 for the 3 years of the project, or a return of around 81 times the officers' cost.

This campaign has been highly cost effective resulting in very significant investment by farmers and deployment of grant aid. These interventions have been directly beneficial through protecting water quality by:

- **stopping identified chronic pollution from occurring,**
- **reducing the risk of future catastrophic pollution events and**
- **improving land management practices to reduce run-off.**

9. Incidents

Several significant incidents have occurred in Devon during the lifetime of the project, all involve poorly maintained, constructed or designed slurry storage structures. Although not all these spills occurred in the priority area, the officer responded. The majority of serious incidents are self-reported by farmers, indicating growing confidence in the Environment Agency's reputation to be a fair regulator and taking appropriate enforcement action. However, there is still a reluctance by a significant proportion of farmers to seek advice, self-report or act on the advice of the Environment Agency and partners.

Incident 1 – poor infrastructure and slurry storage causing pollution



A number of years ago this farming business caused a significant pollution in an adjacent stream. It is believed that this business has been causing pollution of the stream for many years due to poor infrastructure and poor farming practices. The farmer was referred to NE and a Farm Infrastructure Report was produced, the Upstream Thinking Project have also provided grants and advice. The farmer suffers periodically with stress and the Farming Community Network have been involved in supporting the farmer. The farmer uses an old silage silo to store slurry, banking up FYM to create a wall to “contain” slurry, a previous warning letters had advised against this activity after the wall had collapsed causing pollution. The yard below the “store” is inches deep in slurry and the adjacent slurry tower is always full to the brim. The yard area drains down the side of a shed and into the stream. The farmer has placed a piece of plywood as a barrier to the slurry, but this is not working. The dirty water system has to be pumped out with a bowser as the pumps broke down several years ago and were never replaced. A SSAFO Regulation 7 Notice requiring improvements was issued.

Incident 2 - slurry tower split

This Category 2 incident involved a release of around 100m³ of slurry. A split occurred in the side of a slurry tower, which was detected at about 5:30am when the farmer arrived for milking. The tower was not completely full but was old and there was evidence that a number of the panels had been repaired and some holes were visible in the top ring of the tower. The tower drained into the reception pit, which we believe to hold around 20m³, so this would have stored some of it.

The slurry ran into an adjacent stream, then a few hundred meters before it joined a Brook below. This was heavily polluted but possibly due to the recent wet and cold weather, it didn't seem to be having a significant impact on either the oxygen levels in

the immediate stream or in the Brook. Ammonia may have had a more significant impact but due to high DO %, this may have been mitigated significantly.

In order to intercept the flows, the farmer installed a ditch approximately 50m long, 1m wide and between 1 and 2m deep, supplying temporary storage of between 70 and 80m³. The farmer also had their contractor out spreading slurry on 2 fields at a rate between 30 and 35 tons/ha. They checked to make sure that the slurry did not run off the fields.



Split in slurry tower



Slurry interception ditch

Due to the prompt report by the farmer, the discharge was intercepted within a couple of hours and a contractor has been employed to design and install a new earth bank lagoon.

10. Environmental Farming Regulations

The Environment Agency is the regulating authority for a number of regulations under which farming must operate, these are summarised below:

- a. **The Environmental Permitting (England and Wales) Regulations 2016 (EPR 2016)** regarding offences relating to pollution of watercourses/ ground waters and waste offences including burning of wastes
- b. **The Water Resources (Silage, Slurry and Agricultural Fuel Oil) (England) Regulations 2010 (SSAFO)** regarding the construction of oil, silage and slurry storage
- c. **The Nitrate Pollution Prevention Regulations 2015 (NVZ regs)** regarding storing and spreading of livestock slurries, record keeping and slurry storage requirements.
- d. **The Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018) Farming Rules for Water)** regarding the application of slurry/ fertiliser, crop need, inappropriate spreading activities, spreading in proximity to water interests, livestock poaching, causing pollution, soil protection
- e. **The Salmon and Freshwater Fisheries Act 1975 (SAFFA)** –regarding disturbing or polluting the environment of fish, spawn, eggs or food of fish

11. Environment Agency Issues in 2019	Recommendations
a. The Environment Agency farm data is based on 2014 data. Farming varies yearly and more up to date data should be available to officers.	RPA data is updated yearly, and this should be made available to the Environment Agency and partner organisations as should FSA and APHA data.
b. Due to reduced resources and less officers on the ground it is hard to establish effective, trusted working relationships with the farming community especially if they only see us when responding to an incident where we are likely to be following PACE procedures and considering our enforcement response, not assessing infrastructure. c. Environment Agency staff are not always recognised by farmers as being credible and it is perceived they lack a real understanding of the pressures of farming. This sometimes manifests in mistrust and tension.	Environment Officers working on agricultural regulation must be fully trained in farming legislation and understanding agriculture, including monetary benefits of proper design of infrastructure, rainfall storage, slurry storage etc. Environment Officers need to be aware of the current economic pressures faced by farmers. They must also have a full understanding of all aspects of land management so that any offences or breaches are dealt with proportionally. EO's should be aware of tools such as aerial photos to check on farm developments, AHDB slurry wizard, PLANET, MANNER-NPK, etc There should be a rolling program of farm visits and presentations to farming groups. We should encourage our partners such as NFU, Natural England, Wildlife Trusts and North Devon Biosphere to involve us in seminars and meetings where we should give presentations where possible.
d. Concentrating visits into the period between October and March when livestock are housed, is very demanding on the inspecting officer, combined with other duties.	Assign more specialist officers to the projects during the best inspection periods. Where follow up visits are needed, specialist agricultural officers, CSFO's or other specialist partners should support EO's. This will free up EO resource. It is rare that compliant farms have significant issues.
e. The reduction of routine sampling and fauna assessment makes it difficult to establish if nutrient concentrations are reducing and WFD status improving, although we do have limited data that there have been improvements.	Implementation of effective sampling regimes in project areas are essential so that we can effectively measure the effect of the projects. Use of Sondes might be justifiable in these project areas.
<p>Addendum 2022:</p> <p>Operational projects have shown that compliance with environmental regulations on farms has been as low as 5%. These projects have also demonstrated the efficiency of an advice led regulatory approach in delivering increased compliance and subsequent improvements to the environment. This success led to £13m funding to enhance our Agricultural regulatory resources. We have 85 new Agricultural Regulatory Inspection Officers with a focus on improving compliance with environmental legislation on farms. We will deliver 4000 regulatory inspections per year during the next three years. Focussing on protected areas initially (Habitats sites, in particular those that are in unfavourable condition due to excess nutrients). Our approach is advice led regulation, working with farmers and partners to secure improvements. We are very clear required improvements must take place. We are also testing new and novel approaches to regulation including Earth Observation technology and remote sensing to identify potential issues utilising satellite, aerial and drone imagery.</p>	

12. Farm Management Issues - 2019	Recommendation
<p>a. A significant number of farm business' are either unaware of the regulations, interpret them incorrectly or choose to take a business risk and not comply. The lack of infrastructure leads to pollution and some farms were found with polluting discharges that must have been going on for years, if not decades.</p>	<p>Farm business' need help to recognise that efficient, sustainable business models including compliance with regulations improves environmental performance, reduces flooding and reduces wastage of valuable resources such as slurry and silage liquors. Some of this can be achieved by partner seminars. Anecdotal evidence indicate that farmers who do not attend these presentations often have issues on their farms that can only be addressed through one to one farm visits.</p>
<p>b. Farmers/ agents/ advisors will often wrongly report structures as SSAFO and NVZ compliant. Whether this is deliberate or not is unclear.</p> <p>c. Even when they have been advised to contact us and the planning authorities before constructing SSAFO/ NVZ structures, many farmers fail to do so. This may lead to wasted investment in non-compliant structures leading to a bigger environmental risk or further investment. A fixed penalty fine for this offence would be a deterrent.</p>	<p>Insurance companies should reduce premiums for farms with fully compliant SSAFO/ NVZ structures, and increase premiums for those without compliant structures.</p> <p>ELMS and other schemes should only be open to those who meet the regulatory baseline by proving they are compliant with SSAFO/ NVZ regulations.</p> <p>Larger dairy farms should be managed by somebody who has received accreditation as technically competent similar to the TCM waste scheme. It should be an offence to provide misleading or incorrect information to the Environment Agency, be it by the agents or by the farmer.</p> <p>Food chain inspecting schemes such as Red Tractor ensuring that their inspectors are properly trained on environmental protection and infrastructure requirements especially. As they have a lot of coverage, they can be extremely influential.</p> <p>Permitting of the dairy sector would ensure farmers understand their responsibilities as infrastructure and spreading controls would be implicit in the permit.</p>
<p>d. Investment on tenanted farms is notoriously poor and getting landlords to update facilities can be difficult and longwinded. Many tenancy agreements are too short to encourage investment</p>	<p>Landlords should ultimately be held responsible for the activities on their tenanted farms. They should ensure that the tenancy agreements stipulate what farming activities are allowed on the farms, as is now being done by DCC. Tenancy agreements should ensure that the condition of the land remains unchanged or improved during the period of the tenancy. This would drive home messaging around soils and land management.</p>

13. Farm advisors/ agents/ consultant issues	Recommendation
<p>a. The Environment Agency often refer farmers to CSF and agents/ consultants/ advisors. Some of these agents and consultants are responsible for poor advice historically and do not take a holistic view of herd increases and the resultant infrastructure investments required to meet regulations.</p> <p>b. For example, when infrastructure is being considered, innovative farming and rainwater separation by roofing or profiling of yards/ structures is sometimes not considered, although they can be very cost effective.</p>	<p>Agents/ consultants/ advisors should be fully trained and accredited, including in the regulations pertaining to farming, such as Planning Law, SSAFO, NVZ and FRfW.</p> <p>Farms should not expand their herd significantly without having first constructed the slurry and silage infrastructure to effectively service the herd. Possibly it should be accompanied by an EIA</p> <p>Advisors should be liable for poor advice that either makes the farm non-compliant with the relevant regs or puts them at risk of causing pollution or other enforcement action.</p>

14. Other Issues	Recommendation
<p>a. There seems to be a misapprehension that farmers comply with SSAFO and NVZ regulations and have invested in infrastructure as required by the regulations. This is clearly not our experience in North Devon. The lack of suitable finance streams and the expense/ difficulty in getting bank loans has led to many failing to invest in the right infrastructure.</p>	<p>Grants for mandatory structures would be unpopular with those farmers who have already invested significantly to get compliant. Better finance systems would allow the sector to invest more efficiently i.e. long term loans with preferential rates (or agricultural bonds) that are attached to the property for the life of the loan. The loan could be repayable or transfer to the new owners when it is old.</p>
<p>b. Stewardship grants are available for a number of capital schemes. Applications for grants need to be submitted by 31st July and scheme approvals are notified at the end of the following January. Following a referral it may be over a year before the farmer even knows if they have been successful in their application.</p>	<p>Improve efficiency, possibly by having a system that allows applications to be submitted, assessed and approved throughout the year. This would reduce the strains that are inherent with the existing system.</p>
<p>c. Capital and stewardship grants can be obtained for improvements to farms, irrespective of whether the farm complies with SSAFO/ NVZ regs. This can encourage farmers to divert funds away from compliance with regulations, such as pollution prevention or mandatory infrastructure under SSAFO/ NVZ regulations.</p>	<p>Countryside Stewardship includes a mandatory evidence check relating to any work on a SSAFO structure being signed off by EA. This has yielded some positive outcomes. Grant aid should only be approved by CSFO's or other partners where it addresses or works alongside addressing key pollution risks, or non-compliant infrastructure issue. CSFOs and EOs are currently doing this in North Devon. Action plans to bring the farm into compliance with the regulations should be agreed prior to funding being authorised.</p>
<p>d. Depressed milk prices in recent years along with uncertainties linked with the UK's departure from the European Union has reduced the amount of investment in infrastructure. With little presence from the Environment Agency there has been no real driver to make improvements to infrastructure.</p>	<p>Larger livestock, high intensity or higher risk farms should expect to be inspected every year. Once the farms are fully compliant with the regulations and have shown that they have management systems in place to prevent pollution, they can be re-assessed and the lower the risk, the less they need to be inspected. The proposed permitting regime for intensive cattle could cover this. Being a member of an approved assurance scheme could also reduce regularity of EA visits.</p>
<p>e. Whilst funding has been secured for continuation of the project in 2020/2021 reliance of project funding for agricultural regulation is unsustainable and merely offers a "sticking plaster" fix for a significant resourcing issue</p>	<p>Funding for Environment Agency agricultural compliance and enforcement work should be increased significantly or funded by a suitable permitting regime. This should include funding to implement the Farming Rules for Water.</p>