Integrated Sea Lice Management Plan

Procedure

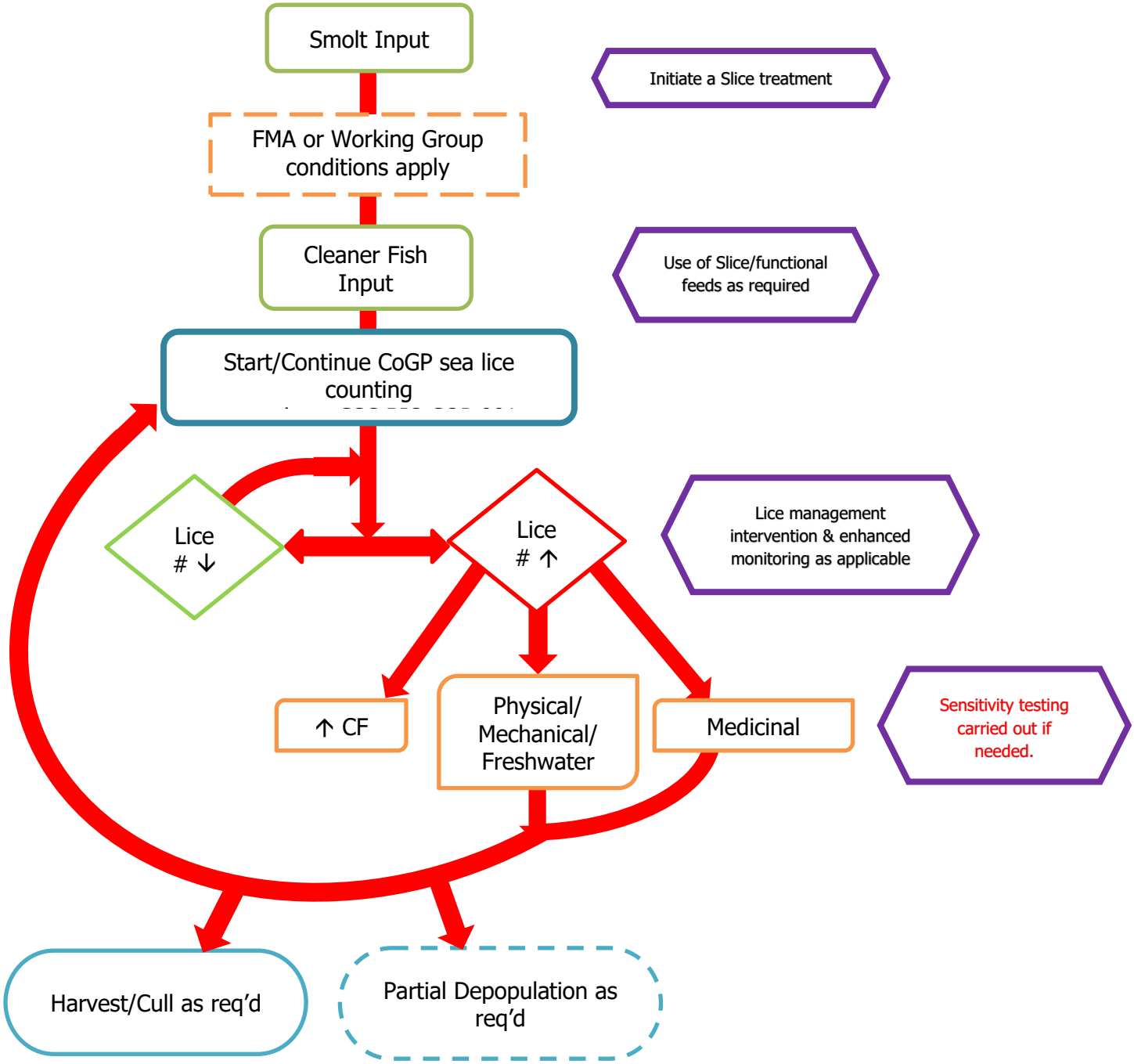
BFS follow a stringent, quality assured integrated sea lice management (ISLM) plan as outlined below. It is our aim to actively reduce the use of medicinal products whilst increasing the use of biological control, (i.e. Cleanerfish) and systems which physically remove sealice (e.g. Hydrolicer). All sites are operated according to a site specific Sea Lice Action Plan (SLAP) based on the ISLM.

Management notes:

- Sealice Action Plan (SLAP) should be drawn up and reviewed with site Production Team during Veterinary Health & Welfare Plan review and during End of Cycle (EOC) review, bearing in mind all available and appropriate tools for sealice control. See *BIO.SOP.38 Sea Lice Action Plans and MS Reporting.*
- Sites are risk assessed according to various internal and external factors that influence lice control, which determines whether site is red, amber or green with regards to lice strategy. See Sea Lice Control Risk Assessment.
- Once smolt transfer numbers are known, cleaner fish stocking plan is drawn up, and sufficient cleanerfish sourced to deploy at currently accepted efficacious stocking rates, plus some contingency resource. Ideally, cleanerfish are planned to be deployed within the first few months of the cycle to ensure that smolts and cleanerfish habitualise to cohabitation well in advance of potential sealice challenge. Equally cleanerfish stocking may occur later or be topped up over a protracted period of time, should circumstances require.
- Where freshwater sites' medicine discharge consents allow, smolts should be transferred under Slice cover. If Slice is not available then 1st treatment should be planned as soon as fish are fully feeding. Individual cages may be treated separately as required.
- Lice monitoring to commence as soon as fish can be caught with feed and continue throughout the production cycle as per *SEA.WKI.24 Lice Counting*.
- At any appropriate point within the cycle (~once per cycle), when enough sealice are available, sensitivity testing to be carried out for at least one site within a farming area via genetic bioassay (*BIO.SOP.35 Bioassay Patogen Sampling*). This will determine general direction of sensitivity drift and inform choices of medicine for region for that cycle.
- Where sites operate in a FMA or under agreed Working Groups, any changes to lice management will be reflected in the site specific SLAP.
- Lice reporting to MS will adhere to most recent published guidelines (*BIO.WKI.12 Marine Scotland Weekly Reporting)*.
- For details on Enhanced Monitoring see *BIO.SOP.38.*
- Failed treatments will be investigated and reported as per *BIO.SOP.37* as required.
- Sealice control is integral to general fish health and cannot be viewed in isolation. Diseases like AGD and PD can temporarily limit the delousing choices, due to poor gill function or muscle weakness respectively, which will reduce fish tolerance to handling.
- Monitoring for these diseases in the pre-clinical stage and mitigating them to prevent or reduce clinical disease, e.g. use of PD vaccine where appropriate, and strategic prophylactic AGD treatments, allows smart intervention choices that will be appropriate to fish health at the time. Fish suffering from clinical disease like PD or AGD may need to be deloused using lower stress interventions like cleanerfish top-up, short medicinal baths or freshwater treatments, whereas more robust healthy fish can have the full suite of options available to them including physical/mechanical louse removal. See *BIO.SOP.39 Planning Treatments (Marine)*
- Details and outcomes will be recorded on site specific SLAPs.
- Partial depopulation may occur alongside other intervention methods.
- If no further interventions applicable then full harvesting of the site will occur or as directed by Marine Scotland as per the published guidance.
- During the harvest period, sea lice treatments will be administered as required, taking withdrawal periods into consideration where applicable. Non-medicinal mechanical treatments, or FW would be prioritised to ensure that populations can be harvested as planned.
- Throughout the harvest period, as salmon are removed from the pens, cleanerfish will be redistributed within the site as a priority, and then within the same management area where applicable, and only following appropriate risk assessment.

*within SEPA discharge consent allowances

- Where anaesthetic withdrawal limits conducting lice counts in the 3 weeks prior to harvesting, visual assessments will be made of the fish routinely (once per week as a minimum) and treatment administered if lice levels appear to increasing. Lice will also be monitored on harvested fish (counts done at the factory), and on moribund fish that are removed for humane dispatch, as a gauge of 'direction of travel' in lice numbers.
- Harvests are planned according to *SEA.SOP.13 Harvest protocol*, to ensure that welfare and lice control are not impeded. Where a small number of fish are expected to remain in a pen, these will either be taken for harvest, or transferred to another cage, thereby reducing the time that small populations of fish are left on site potentially untreated for sea lice.



*within SEPA discharge consent allowances

Name	Signed	Role	Date
Dave Cockerill		Director of Biology / Company Veterinarian	9/11/22

References

- BIO.SOP.37 Reporting Failed Treatment
- BIO.SOP.38 Sea Lice Actions Plans & MS Reporting
- BIO.SOP.39 Planning Treatments (Marine)
- SEA.WKI.24 Lice Counting
- BIO.SOP.35 Bioassay Patogen Sampling
- SEA.SOP.13 Harvest Protocol
- BIO.SOP.25 Health Screening During Marine Development
- BIO.WKI.12 Marine Scotland Weekly Reporting

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