

WGWAP Recommendations Table - Environmental Monitoring

Meeting	Reference	Cross-Reference	Topic	Recommendation	Party resp.	Response	Target completion date	Status	Superseded by	Comments	Internal comments
D. WGWAP-1	WGWAP-1/018	WGWAP-1/3 - Section 11.0	Environmental monitoring	The Panel suggests that data on the abundances of mobile epifauna may be significant in understanding whale feeding behaviour, and recommends that Sakhalin Energy researchers work towards identification and application of an appropriate and efficient method for sampling mobile epifauna.	SEIC	Epifauna sampling is planned for 2007 with the intention of quantitative analysis of it in the feeding areas. Samples of epifauna taken in 2006 will allow for composition to be analyzed. This will be included in the final report due by Mar 31 2007.	Apr-07	Closed - implemented/resolved satisfactorily			
D. WGWAP-1	WGWAP-1/021 (2)	WGWAP-1/3 - Section 11.0	Environmental monitoring	The Panel recommends that Sakhalin Energy researchers take the following concepts into account as they proceed to develop LTMPs of benthic communities in the whale feeding areas: (2) Continued monitoring of benthic communities in the whale feeding areas, using sampling approaches employed in previous years, is essential as a long-term commitment. Sampling effort should continue to focus on target variables identified in the IISG report. To maximise the potential both for large-scale inference and for discerning trends, sampling should continue in three categories: 1) a stratified random sample placement; 2) sampling of a grid of spatially fixed study sites; and 3) sampling in proximity to identified whale feeding locations.	SEIC	The approach proposed was extensively used in previous years and will be employed again in 2007.		Closed - implemented/resolved satisfactorily			
F. WGWAP-2	WGWAP-2/002	WGWAP-2/3 Section 4	Environmental monitoring	Recognizing the practical difficulties that occurred last year (2006), the Panel recommends that timing of sampling of benthos be standardized within month among years, to the maximum extent practicable.	SEIC	SEIC is aware of the importance to standardize the benthic sampling period and has and will continue to undertake all effort to ensure this happens in 2007 field research and beyond.		Closed - implemented/resolved satisfactorily			
K. WGWAP-7	WGWAP-7/018	Item 10.3	Environmental monitoring	As a way of ensuring that the above request is conveyed in an official manner, the Panel recommends that IUCN use its good offices to communicate with ENL on this matter.	IUCN	A request was sent to ENL on 5 March 2010.	15-Feb-10	Closed - implemented/resolved satisfactorily			

WGWP Recommendations Table - Environmental Monitoring

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K. WGWP-7	WGWP-7/017	Item 10.3	Environmental monitoring	In this spirit the Panel requests that ENL provide the following information: 1) A summary of monitoring activities related to both oil spill risk and ecosystem effects associated with the oil pipeline across the centre portion of Piltun Lagoon; and 2) Copies of reports documenting the link between benthic prey population dynamics and the 'anomalous' distribution of gray whales in the Piltun region during late spring, summer, and early autumn of 2008.	ENL		01-Apr-10	Closed - no longer relevant but had not been implemented satisfactorily at the time it became moot			
A. ISRP	ISRP-34	ISRP Report, p. 71 (p. 66 in the printed version of the report)	Environmental monitoring	The issue of artificial reef effect of the platform is not addressed in the CEA. Mitigation to prevent changes in the composition and abundance of marine organisms around the platforms is probably not feasible, but monitoring those changes may be important to future interpretations of changes in the broader Sakhalin Shelf ecosystem.		Monitoring of benthos communities (pollution related and composition) is part of the permit requirements. Benthos studies in WGWP feeding area are also planned for long term.	May-05	Closed - superseded by a new recommendation		New recommendation to come from Environmental Monitoring Task Force	
C. IISG	Item 13, p.9 (of IISG report)		Environmental monitoring	We recommend "sampling at permanent locations repeatedly" approach because of the value we see in high power to detect trends. (...) We recommend that minimum levels of detectable change be set at 25% for total benthic animal biomass, and at 50% for species that are dominant community members, such as those listed above. (...) We strongly encourage LTMP designers to make a maximum effort to attain replication levels necessary for the specified levels of minimum detectable change, ensuring adequate power to detect trends in benthic animal data.	SEIC-IBM	Benthic sampling in the whale feeding areas has been conducted both at permanent stations in order to enable the detection of trends and at variable locations within predefined grids to enable a better spatial coverage. ACTION: Check current sampling methodology for detectability of 25% for total benthic biomass, and 50% for dominant community prey species and on adequate statistical power.	End 2006	Closed - superseded by a new recommendation		New recommendation to come from Environmental Monitoring Task Force	

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C. IISG	Item 6, p.6-7 (of IISG report)		Environmental monitoring	Two primary questions must form the basis for the Long-term Monitoring Programme (LTMP) implementation in the gray whale feeding areas and in Piltun Lagoon: (2) How will events such as pipeline or platform construction that produce physical alteration of natural habitats, occurring in association with Sakhalin II activities, influence the structure and dynamics of marine benthic communities of significance to the nutrition of the western gray whale population? How will such effects be distinguished from natural variation in the ecosystems of the Okhotsk Sea region?	WGWAP to review available information and provide guidance to SEIC.	Research on the structure and dynamics of the benthic communities of the Piltun feeding area, with an emphasis on whale prey species, has been conducted since 2002 and provides good baseline data. No dredging for pipeline or platform installation will take place in either the Piltun or Chaivo whale feeding areas so direct physical disruption of potential food resources will not occur. Indirect disturbance due to sedimentation is not expected. Plume cloud monitoring activities were conducted as a routine activity during pipeline installation activities in Lunskeye in 2004, where sediments are broadly similar, and where construction methodologies and water depths are near identical as in Piltun. The results indicated a general transport of sediments to the south, based on net current direction. Also, the sediment plumes have not been shown to extend further than 500m either side of the pipeline, and turbidity was within background concentrations.		Closed - superseded by a new recommendation		New recommendation to come from Environmental Monitoring Task Force	
C. IISG	Item 8, p.8 (of IISG report)		Environmental monitoring	The relationship between sampling characteristics of grab samples and diver-obtained samples must be determined to permit standardization of data reporting. This is particularly important in light of frequent use of shallow benthic habitats as foraging locations by gray whales.	SEIC-IBM	SEIC commits to determine the relationship between sampling characteristics of grab samples and diver-obtained samples within 2006.	End 2006	Closed - superseded by a new recommendation		New recommendation to come from Environmental Monitoring Task Force	
B. Lenders	Vancouver I workshop report, issues table 15.1		Environmental monitoring	Artificial reef effects of PA-B installation have not been addressed.	SEIC	SEIC will undertake post-construction ecological monitoring around the platform. Reef effects are likely to be over small spatial scale and probably will not affect (or: are very likely not to affect) the feeding ground. Further discussion required to see if this is a live issue. SEIC accepts that this issue will go to the WGWAP.		Closed - superseded by a new recommendation		New recommendation to come from Environmental Monitoring Task Force	

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D. WGWP-1	WGWP-1/016	WGWP-1/3 - Section 11.0	Environmental monitoring	The Panel recognizes the spatial separation of Piltun Lagoon from Sakhalin II activities, but nevertheless continues to recommend studies of the linkage of Lagoon biota and detrital output with WGWP feeding areas.	SEIC	In 2005 and 2006 SEIC benthic program included sampling inside and outside Piltun lagoon to investigate detritus transport and its influence on Piltun feeding ground. In light of the large number of publications available on Piltun lagoon biota and the fact that the Company is not planning any activity inside the lagoon SEIC sees little reasons for further studies there.	Apr-07	Closed - superseded by a new recommendation	WGWP-1/017		
D. WGWP-1	WGWP-1/017	WGWP-1/3 - Section 11.0	Environmental monitoring	The Panel recognizes the logistical challenges and potential costs of maintaining an effective LTMP in Piltun Lagoon, given its size and physical complexity and the spatial variation in within the lagoon ecosystem. It is recommended that Sakhalin Energy focus on measurements of quality and quantity of detrital transport from the Lagoon to whale feeding areas. Primary goals for study of detrital transport should be: identification of source species contributing to detrital mass, stable isotope signatures for detritus transported from the Lagoon to whale feeding areas, and interannual variation in quality and quantity of transported detritus.	SEIC	In 2005 and 2006 SEIC benthic program included sampling inside and outside Piltun lagoon to investigate detritus transport and its influence on Piltun feeding ground. In light of the large number of publications available on Piltun lagoon biota and the fact that the Company is not planning any activity inside the lagoon SEIC sees little reasons for further studies there.		Closed - superseded by a new recommendation	WGWP-3/015		
D. WGWP-1	WGWP-1/019	WGWP-1/3 - Section 11.0	Environmental monitoring	The Panel recommends that Sakhalin Energy researchers continue to assess the potential value of sidescan methods in the context of benthic studies on the NE Sakhalin shelf.	SEIC	Side scan sonar value for the benthic study will be additionally assessed.	Apr-07	Closed - superseded by a new recommendation		New recommendation to come from Environmental Monitoring Task Force	

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D. WGWAP-1	WGWAP-1/021 (1)	WGWAP-1/3 - Section 11.0	Environmental monitoring	The Panel recommends that Sakhalin Energy researchers take the following concepts into account as they proceed to develop LTMPs of benthic communities in the whale feeding areas: (1) LTMP design should reflect consideration of possible spatial and temporal separations in processes important to benthic community structure, dynamics and productivity. Detrital transport connections between Piltun Lagoon and the whale feeding areas are an example of spatially distinct processes that could be important to whale food availability. Effects of winter and spring sea ice cover and movement on subsequent patterns and productivity of benthos provide examples of potentially important processes that are temporally disjunct.	SEIC	In 2007 plans are to start sampling program earlier in the season to be able to estimate prey distribution and development prior to the feeding season.	Nov-07	Closed - superseded by a new recommendation		New recommendation to come from Environmental Monitoring Task Force	
D. WGWAP-1	WGWAP-1/021 (4)	WGWAP-1/3 - Section 11.0	Environmental monitoring	The Panel recommends that Sakhalin Energy researchers take the following concepts into account as they proceed to develop LTMPs of benthic communities in the whale feeding areas: (4) Geographic information system (GIS) technology should be applied to the management and presentation of benthic community data. This approach facilitates the characterisation and communication of patterns in the data, and will contribute to understanding the linkages between community patterns and various physical, biological and anthropogenic processes on the NE Sakhalin shelf.	SEIC			Closed - superseded by a new recommendation	WGWAP-2/001		

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D. WGWAP-1	WGWAP-1/020	WGWAP-1/3 - Section 11.0	Environmental monitoring	The Panel was asked to consider a proposal from WWF-Russia for sampling benthos in Severnaya Bay on the NW Sakhalin shelf, given recent observations of foraging gray whales there. It notes that such studies could be valuable and concludes that this work should be pursued. The Panel emphasises that methods for assessing benthos should be the same as those employed in Sakhalin Energy studies of benthos in the two known whale feeding areas on the NE Sakhalin shelf.	All research groups	First samples were taken in Severnaya Bay in 2005. More sampling was carried out in 2006 and that allowed for delimiting of the area available for whale feeding. The same methodology used in the feeding areas was applied. Prey stock is planned to be estimated in 2007.	Nov-07	Open - in need of clarification/expansion			
F. WGWAP-2	WGWAP-2/003	WGWAP-2/3 Section 4	Environmental monitoring	The Panel recommends that Sakhalin Energy's scientists attempt field collections of fecal matter from foraging whales, to the extent practical and with minimal disturbance of foraging whales, to search for hard-part remains of sand lance and to assess the frequency and significance of sand lance in the whales' diet.	SEIC	A fecal sampling program requires a boat to maneuver in extremely close proximity to animals, with the potential for disturbance. SEIC will try to collect fecal matter in 2007 if it appears possible with only minimal disturbance to the whales. SEIC will discuss the practicalities of such a programme in future years and will report to the next WGWAP.	31-Oct-07	Open - in need of clarification/expansion			
D. WGWAP-1	WGWAP-1/021 (3)	WGWAP-1/3 - Section 11.0	Environmental monitoring	The Panel recommends that Sakhalin Energy researchers take the following concepts into account as they proceed to develop LTMPs of benthic communities in the whale feeding areas: (3) The development of effective methods for summarizing data on benthic communities and placing them in the contexts of spatially explicit time series is highly desirable. Such an approach is suggested because of the potential value in understanding connections between food availability and other time-varying patterns, such as annual calf production and the 'skinny whale' phenomenon.	SEIC	GIS system is a part of the data management plan and is planned to be designed and implemented for the whole benthic dataset.	To be determined once the scope is fully identified.	Open - in progress			

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F. WGWAP-2	WGWAP-2/001	WGWAP-2/3 Section 4	Environmental monitoring	The Panel recommends that Sakhalin Energy's scientists take into account the Panel's recommendations from the WGWAP 1 (November 2006) in the planning and execution of 2007 benthic fieldwork (see WGWAP 2/INF 1). The Panel attaches particularly high priority to the recommended incorporation of benthic ecosystem data into a GIS-type database in order to facilitate two types of investigation: (1) a more thorough understanding and appreciation of spatial and temporal patterns in the benthos, and (2) evaluation of quantitative relationships among benthic data and data from other aspects of the study of western gray whales in the area. For example, benthic ecosystem data should be included among the variables incorporated in analyses of noise effects.	SEIC	During the Vladivostok meeting in January 2007 between GIS experts and scientists involved in WGW monitoring it was decided to include the benthos data in to GIS database together with the other parameters, such as distribution, acoustic, etc. It is being implemented jointly with ENL and will be ready by end 2007 as was committed in response to WGWAP 1 recommendation	31-Dec-07	Open - in progress			SEIC should provide a progress report on this.
D. WGWAP-1	WGWAP-1/022	WGWAP-1/3 - Section 11.0	Environmental monitoring	The Panel further recommends that it receive at its next meeting an integrated analysis and overview of results so far, with special attention to the observed annual difference in calf production.	SEIC	Calf production will be reported in Photo-ID report. Additionally calf feeding points benthic sampling analysis will be presented in the Benthic report. Due by Mar 31 2007.	Apr-07	Open - no action yet taken			SEIC's first response is missing the point. SEIC should respond to the recommendation for an integrated analysis.
M. WGWAP-10	WGWAP-10/009	Item 6.1	Environmental monitoring	Physical characteristics of benthic sediments and bottom water temperatures have been measured over the periods 2002-2010 and 2007-2010, respectively, and the Panel endorses the need and relevance for measurements of this kind on an annual basis. However, the Panel notes with concern the lack of coordination between the benthic and acoustic sampling efforts and recommends that the company coordinate environmental sampling to the extent practical in order to maximise insights on the NESS habitat and avoid duplication of effort.	Sakhalin Energy	SEIC need to discuss with ENL and solicit their support. SEIC will report back to the panel on progress in the future.	Decision by 1 August 2011	Open - in progress			

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M. WGWAP-10	WGWAP-10/010	Item 6.1	Environmental monitoring	Whilst recognising the low levels of POCs, heavy metals and PHCs in samples collected to date, the high cost of sample collection and processing, and the crowded agenda for sample collection and analysis facing the benthic monitoring team during and immediately following each field season, the Panel recommends that the sampling schedule for NESS POCs, heavy metals and PHCs be changed from annual to biennial or triennial. An annual schedule should be reinstated if any anthropogenic event occurs on the NESS that might reasonably be expected to alter the currently recognised patterns in benthic contaminants in a significant way.	Sakhalin Energy	SEIC welcome the thinking from the Panel. SEIC will discuss this recommendation with ENL as Joint Programme (Offshore) Operator. The 2011 benthic programme is approved, but from 2012 SEIC will investigate how this could be implemented.	Decision by 1 August 2011	Open - no action yet taken			
M. WGWAP-10	WGWAP-10/011	Item 6.1	Environmental monitoring	The Panel recommends that sampling be initiated in summer 2011 for concentrations of polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDEs). Both are recognised as anthropogenic contaminants often associated with industrialisation of coastal marine environments, and both are a matter of significant concern in the context of marine conservation on a global scale because of potential for toxicity, accumulation in tissues and persistence. Levels of PCBs and PBDEs should be measured on the NESS annually for a minimum of three years, after which the need and frequency for subsequent measurements can be assessed.	Sakhalin Energy	SEIC will discuss this recommendation with ENL as Joint Programme (Offshore) Operator. The 2011 benthic programme is approved, but from 2012 SEIC will investigate how this could be implemented.	Decision by 1 August 2011	Open - no action yet taken			

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M. WGWAP-10	WGWAP-10/012	Item 6.1	Environmental monitoring	Also with regard to contaminants, the Panel recommends sampling known or suspected significant prey of gray whales on the NESS. At a minimum, the sampled species should include the amphipods <i>Monoporeia affinis</i> and <i>Ampelisca eschrichti</i> and the sand lance <i>Ammodytes hexaptera</i> . Tissue concentrations of POCs (including DDTs, HCHs, PCBs and PBDEs), heavy metals and PHCs should be measured in these species (and others deemed appropriate by Fadeev) on the NESS annually for a minimum of three years, after which the need and frequency for subsequent measurements can be assessed.	Sakhalin Energy	SEIC will discuss this recommendation with ENL as Joint Programme (Offshore) Operator. The 2011 programme is approved, but from 2012 SEIC will investigate how this could be implemented.	Decision by 1 August 2011	Open - no action yet taken			
M. WGWAP-10	WGWAP-10/013	Item 6.1	Environmental monitoring	Based on such perceptions, the Panel recommends that the benthic monitoring team be encouraged to develop and test new hypotheses, perhaps including export of phytoplankton biomass or inorganic nutrients from Piltun Lagoon, allowing the significance of Piltun Lagoon effluent, Amur River effluent and local upwelling events and processes to be better understood and placed in context with regard to western gray whale conservation.	Sakhalin Energy	SEIC acknowledge this has scientific value, but they are not in a position to take this forward, since SEIC are not the only Operator on the Sakhalin Shelf. SEIC believe the Panel or specifically the Russian Panel Members, take action here and revert with a proposal.	Clarification of intent by WGWAP-11	Open - in need of clarification/expansion			