



Anadromous Fish Floor (AFF) Policy Recommendation from Small Forest Landowner Caucus

Virtual Presentation to the
Forest Practices Board
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I. Context for including an AFF in a permanent water typing system rule

- **At their February 14, 2018 Regular Board Meeting, the FPB:**
 - directed FPB staff, in consultation with stakeholders, to incorporate Anadromous Fish Floor (AFF) alternatives into rule language, guidance and required analyses to accompany the draft water typing system.
 - At the time of that meeting, the Small Forest Landowner Caucus understood the objective of the AFF to be **minimizing** electroshocking in small, low gradient streams which may have seasonal anadromous fish use, upstream from which Fish Habitat Assessment Methodology (FHAM) may be used.

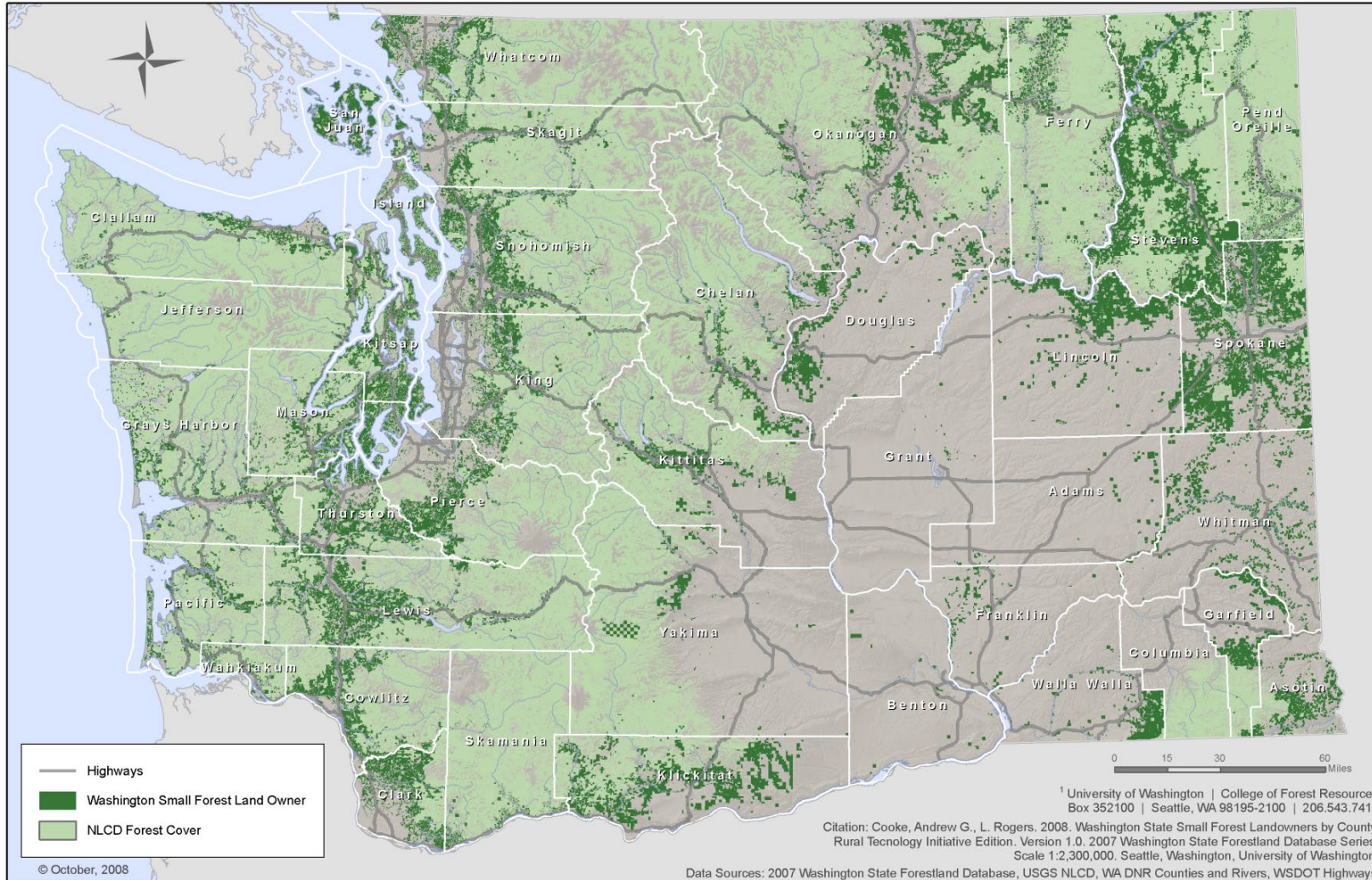


**RURAL
TECHNOLOGY
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Washington State Small Forest Landowners by County

Rural Technology Initiative Edition | Version 1.0 | 2007 Washington State Forestland Database Series

Andrew Cooke¹ and Luke Rogers¹



I. Context for including an AFF in a permanent water typing system rule (continued)

- **At their September 24, 2019, meeting, members of the Board's Water Typing System Rule Committee (Board Committee):**
 - discussed their objective for an anadromous fish floor, as well as whether the definition of AFF is to be based on “presumed” or “likely” habitat but did not finalize their discussion with a motion or vote.
 - In their discussion captured in their meeting summary, the Board Committee generally agreed that “**presumed**” more accurately reflects what they were looking for, and
 - comes from the present situation where there is anadromy all of the time and where there is no need to electrofish.

Least Burdensome Alternative

- **RCW 34.05.328 (1) (e) under the Administrative Procedure Act, that “Before adopting a rule ..., an agency must: ... (e) Determine, after considering alternative versions of the rule and analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection.**

II. Anadromous Fish Floor Workgroup findings

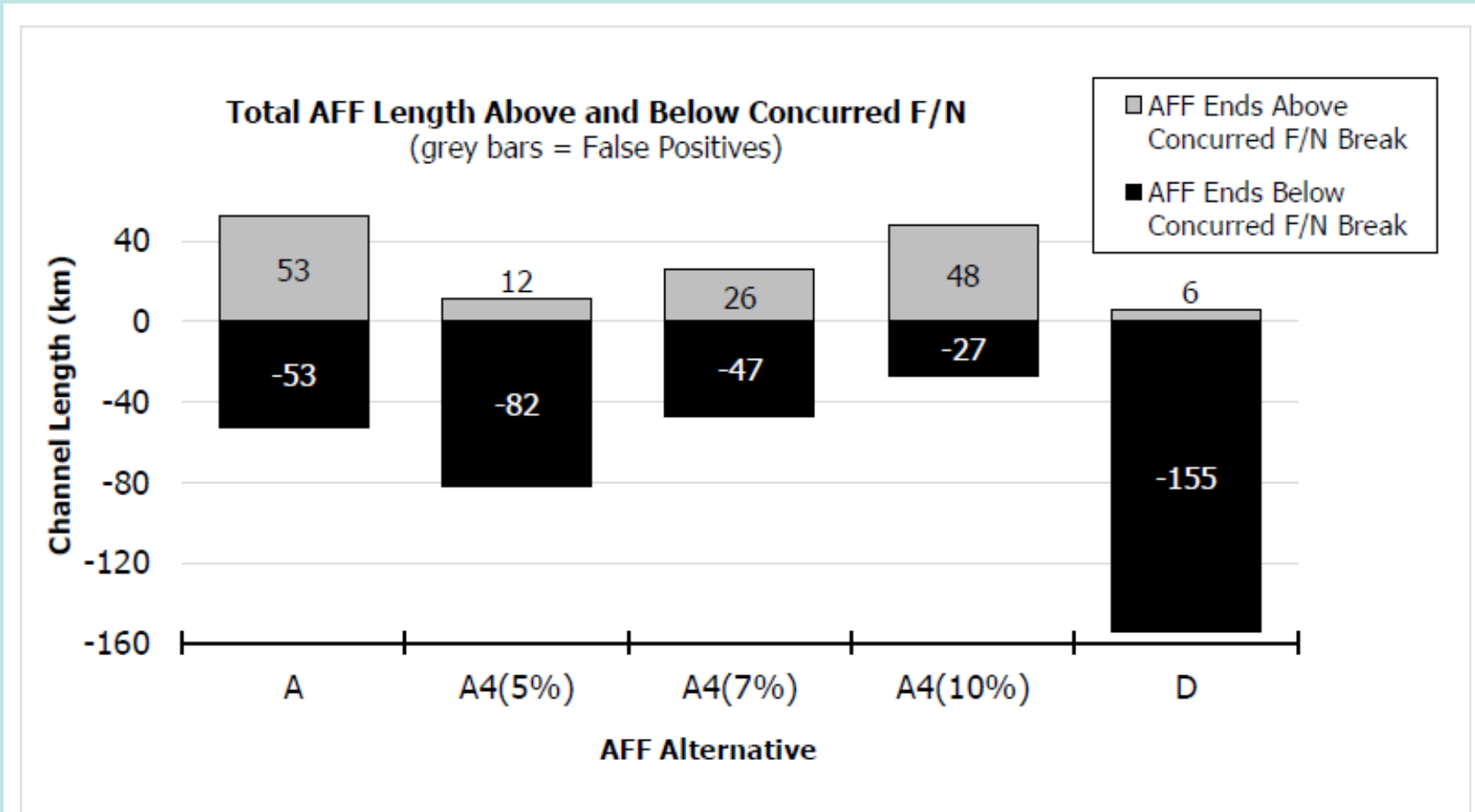
From the December 3, 2021 “Anadromous Fish Floor Spatial Analysis Findings Report”:

- “The ... AFF in the permanent forest practices water typing rule would establish the location where protocol fish surveys to determine water type may begin under the Fish Habitat Assessment Methodology ..., thereby reducing electrofishing in waters that are presumed to have anadromous fish use.”
- “The general approach used was to assemble a database of existing known and presumed fish occurrence data to serve as reference points for comparing our AFF alternatives.”
- “This method of model comparison against independent field data is a standard approach used in the physical and biological sciences.”
- “It allows for evaluation of model “success” as judged in comparison with the data”

From the December 3, 2021 “Anadromous Fish Floor Spatial Analysis Findings Report” (continued):

- **“Relative performance may be judged by the distances between the model prediction and the fish data. Specific to the AFF analysis, this means model ‘error’ may be evaluated by tallying the length of stream where modeled AFF alternatives fall short of or extend beyond the various types of fish distribution data.”**
- **“The AFF project team focused on conducting the analyses to compare the AFF alternatives; the balance of risk between underestimating known anadromous stream length and overshooting the fish-non-fish habitat break point locations is the subject of the associated policy report.”**

From the February 2, 2022 “Anadromous Fish Floor Spatial Analysis Addendum to Findings Report”:



Addendum Figure 5 (equivalent to Figure 11 in main report). Distances that the modeled AFF alternatives terminate upstream and downstream of the F/N break point data. The positive bars (grey) are referred to as ‘False Positives’ in the framework of Figure 2 in the main report.

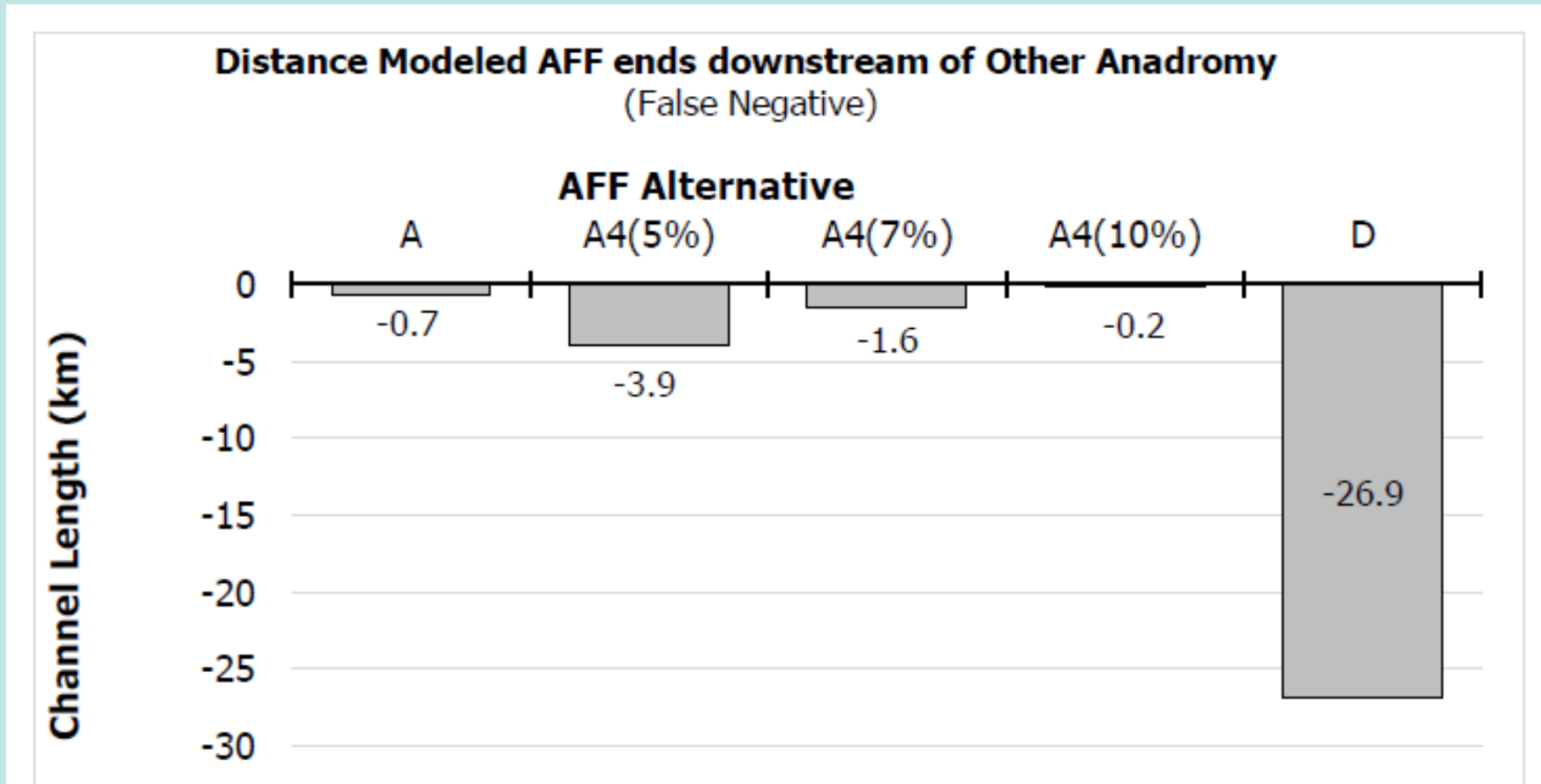
III. Rationale for the SFL Caucus preferring Alternative D over AFF Alternatives A4 7% or A4 10%:

- Of the AFF alternatives analyzed on surveyed streams with concurred F/N breaks:
 - Alternative D has the lowest number and percentage of exceedances of concurred F/N break points (9 exceedances and a 2.1% error rate), as well as the least kilometers of stream length exceedance
 - all of the exceedances under Alt D were on streams tributary to SWIFD streams
 - Alternative A4 7% had an 18.4% error rate (almost 9 times more than Alt D) and 4.4 times more stream length exceedance
 - Alternative A4 10% had a 34.0% error rate (16 times more than Alt D) and 8.3 times more stream length exceedance
- Occurrence of overshoots and stream length exceedances in unsurveyed streams are estimated to be:
 - Almost 9 times greater for Alternative A4 7% and almost 20 times greater for Alternative A4 10%, compared to Alternative D

III. Rationale for the SFL Caucus preferring Alternative D over AFF Alternatives A4 7% or A4 10% (continued)

- **Since the AFF selected by the FPB will define the starting point for FHAM protocol fish surveys and FHAM will generally not be allowed to be conducted below the AFF, the estimated overshoot error rates for unsurveyed streams under Alternatives A4 7% or 10% are extremely problematic for landowners:**
 - **Landowners (or the surveyors they employ) will be forced to call for ID teams to attempt to convince regulators to allow them to start FHAM further downstream in the inevitable event that the modelled Alt A4 7% or 10% AFF points on unsurveyed streams are in error (see last bullet on prior slide)**
 - **Unless adequate implementation procedures are instituted in guidance, these modelled error rates may require protocol stream survey crews to visit a survey site more than once and / or require more ID teams to occur, at increased costs for all ID team participants and for all landowners conducting electrofishing under FHAM.**

III. Rationale for the SFL Caucus preferring Alternative D over AFF Alternatives A4 7% or A4 10% (continued)



Addendum Figure 4 (equivalent to Figure 10 in main report). Bar chart showing the length of stream in which the modeled AFF ends downstream of the 'other anadromy' data (False Negatives).

III. Rationale for the SFL Caucus preferring Alternative D over AFF Alternatives A4 7% or A4 10% (continued)

- The two previous figures clearly show that the occurrence of the AFF terminating downstream of uppermost Other Anadromy and concurred F/N break reference data was higher under Alternative D than any of the A4 alternatives.
- Although some may view this as problematic, it is not.
- If Alternative D (or any AFF alternative) is selected by the FPB, under FHAM, surveyors will be required to evaluate all available fish data and information (including Other Anadromy and resident fish distribution) and / or consult with WDFW and tribal biologists, in order to appropriately identify the initiation point for FHAM fish survey protocols, primarily to minimize electrofishing encounters with anadromous fish but also because protocol surveyors operationally want to minimize field survey time and costs, while meeting all electrofishing survey protocols and standards.

III. Rationale for the SFL Caucus preferring Alternative D over AFF Alternatives A4 7% or A4 10% (continued)

- **Alternative D directly addresses concerns expressed by several caucuses that small, low gradient streams and laterals, particularly in the lower reaches of watersheds, may be missed and / or misclassified as non-fish habitat.**
- **Alternative D extends classification of Type F waters beyond SWIFD streams into small lateral tributaries adjacent to known or presumed anadromous streams even if no fish may be found during protocol electrofishing surveys.**
- **In their July 27, 2017 Report for the Forest Practices Board (FPB), the PHB Science Panel found that abrupt changes in channel gradient (as used in Alternative D for small, low gradient streams tributary to SWIFD streams) were more consistent with how habitat breaks are defined in literature and, based on how fish view and react to the environment they encounter, than do fixed thresholds for gradient (as used in Alternatives A4 7% and A4 10%).**

III. Rationale for the SFL Caucus preferring Alternative D over AFF Alternatives A4 7% or A4 10% (continued)

- **Alternative D also includes definitions consistent with the Science Panel's recommendations for change in gradient (Science Panel Test 15) found in the Science Panel's January 16, 2018 Report to the FBP.**
- **Alternative D included barrier and obstacle definitions consistent with the PHB Science Panel's recommendations in their January 16, 2018 Report to the FPB (“... we recommend the same criteria for eastern and western Washington, which defines a potential fish passage barrier as a 3-ft vertical drop or an abrupt step in the stream channel with at least 20% slope and minimum elevation change greater than or equal to 1 upstream bankfull channel width ...”). The barrier definitions in Alternative A4 7% and 10% are not consistent with the Science Panel's barrier recommendations.**
- **The AFF and barrier criteria used in all AFF A4 Alternatives are overly precautionary and are in conflict with the FPB-sponsored work performed by the PHB Science Panel, as well as published research, including research conducted and approved within the Adaptive Management Program.**

III. Rationale for the SFL Caucus preferring Alternative D over AFF Alternatives A4 7% or A4 10% (continued)

- **FPB selection of any of the AFF A4 Alternatives would also be inconsistent with prior FPB approved objectives that the permanent forest practices water typing rule balance error and make methods to locate the stream break points on the ground as accurate as possible.**
- **All AFF alternatives which include sustained gradient criteria (such as the A4 variants) will invariably require more field time (and cost) to identify the first occurrence of specified sustained gradients beyond the SWIFD point, before the practitioner is allowed to initiate FHAM fish survey protocols.**

IV. SFL Caucus AFF Policy Recommendations

- **Concern that AFF did not go through the normal Adaptive Management process**
- **The SFL Caucus strongly supports Alternative D as the preferred AFF alternative, if the Board continues to support incorporating an AFF in the water typing system**
- **The Board should incorporate the more certain components of FHAM and SWIFD into rule, but relegate the components with more uncertainty, specifically AFF and PHB metrics to Board Manual**
- **The SFL Caucus recommends that further spatial analysis be performed in sample eastern Washington watersheds (and review by the Anadromous Fish Floor Project Team including AFF Policy members) before a final AFF rule decision for eastern Washington is made by the FPB.**
- **The SFL Caucus strongly supports the need for AFF, PHB and Default Physical Criteria (DFC) validation work, as well as extensive monitoring following implementation of a new water typing system rule.**
- **However, the most critically important work pertaining to water typing for small forest landowners is fulfillment of the earlier commitment made by the FPB for development of a LiDAR-based logistic regression map model that accurately predicts fish habitat across non-federal forestlands in Washington and avoids systematic bias.**

Example of
created
fish habitat
(circa
1950)
Would we
still do it
today?





Thank You!

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